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REPORT ON WATER POLLUTION, SOUTHEAST DRAINAGE BASINS

APPENDIX. PART IV

PUBLIC HEALTH SERVICE, WASHINGTON, D.C.

1950

PB 260 301

REPORT ON WATER POLLUTION
SOUTHEAST DRAINAGE BASINS

1950

FEDERAL SECURITY AGENCY
PUBLIC HEALTH SERVICE
WATER POLLUTION CONTROL DIVISION

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Errata sheet inserted.

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The current status of the National Water Pollution Control Program for the Southeast Drainage Basins is reviewed. The report provides an overview of water pollution control for the area, giving available data on water use, conditions of the waters, adequacy of existing treatment facilities, and the need for improved, enlarged, or new treatment works. The area includes part or all of Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Tennessee, and West Virginia.

17. Key Words and Document Analysis. 17a. Descriptors

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ERRATA

Part 4

Page	
467	Figure 20 under column Number should read "31" and figures 19 under both columns headed Undetermined should read "30."
481	Column headed Number (Industrial) should show one new plant and one undetermined.
554	Column heading Industrial should read "Industrial*". Figure 4 under column heading Number (Mun) New Plant should read "**4". Number of municipalities no projects required should be 2 with a population served of 3,300. A footnote should be added"** One municipality requires two new plants."
564	Total sources of pollution should read "4".
658	Figure 19 under column heading Number (Ind.) should read "20".
659	Figure 0 under column heading Industrial for Status Undetermined should read "12".

REPORT ON WATER POLLUTION

Southeast Drainage Basins

1950

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APPENDIX

Part 4

Prepared by:

Southeast Drainage Basins Office
Division of Water Pollution Control
Public Health Service, Federal Security Agency

on the basis of information supplied
by the following Agencies

Alabama Water Improvement Advisory Commission
Florida State Board of Health
Georgia Department of Public Health
Louisiana Stream Control Commission
Mississippi State Board of Health
North Carolina State Board of Health
South Carolina Water Pollution Control Authority
Tennessee Stream Pollution Control Board
Virginia Water Control Board

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Each sub-basin report includes the following:

Table A - Sources of Pollution - Municipal

Table B - Sources of Pollution - Industrial

Table C - Existing Treatment Facilities - Municipal

Table D - Existing Treatment Facilities - Industrial

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SUB-BASIN 32

FLINT RIVER BASIN

GENERAL DESCRIPTION

The Flint River BAsin is bounded on the east by the Ocmulgee, Suwanee and Ochlocknee-St. Marks River Basins, on the south by the Apalachicola River Basin, and on the west and north by the Chattahoochee River Basin. The Flint River Basin comprises 8,315 square miles which lie entirely within the State of Georgia.

The Flint River has its source in the Piedmont Plateau near Atlanta and flows southward 350 miles in an easterly arc to its confluence with the Chattahoochee River at the Florida State line. Its drainage basin extends 215 miles from north to south with an average width of about 40 miles. The river is generally spring-fed from the headwaters to the mouth and is characterized by relatively clear water.

The population of the basin was 403,918 based on the 1940 census. The preliminary 1950 census indicates the population to be 413,718.

ECONOMIC DEVELOPMENT

There are seventeen urban communities entirely within the basin and three others partially within it. These urban communities together constitute thirty-two percent of the total basin population. In 1940 the urban population was twenty-four percent of the total.

The principal natural resources of the basin are its fertile soils and timber supply. Agricultural activities are predominant. The two leading crops are short-staple cotton and peanuts. Other farm products include corn, peaches, pecans, and melons.

Industries of the region fall into three principal categories; re, food and kindred products, chemical and allied products, and textile mill products.

USE OF WATER RESOURCES

The basin contains fifty-seven public water supplies which are used by 125,010 people. Six of these supplies are from surface sources and serve a population of 33,430.

No major power dams exist on the Flint River. Two plants on the main river above Albany and small plants on several of the tributaries are privately owned. The reservoirs resulting from these dams are used for recreational purposes.

A new multiple purpose dam nearing completion on the Apalachicola River just below the junction of the Flint and Chattahoochee Rivers will create a reservoir partly on the Flint which will offer opportunity for development along recreational lines. This reservoir also will provide for a nine foot navigable channel to Bainbridge. At the present time navigation has practically disappeared on the Flint.

POLLUTION AND POLLUTION CONTROL

The Georgia Water Pollution Control AGency has not made abailable to the Southeast Drainage Basins Office data regarding:

1. The amount of pollution, municipal or industrial discharged to the watercourse.
2. Sources of industrial pollution.
3. Existing industrial waste treatment facilities.
4. Adequacy of existing municipal sewage treatment facilities.
5. Requirements for municipal and/or industrial waste treatment plants.
6. Status of treatment works projects to abate pollution, or
7. A project list of treatment works required for the abatement of pollution.

The Georgia Water Pollution Control Agency prepared a report to the municipalities of Georgia, a copy was furnished the Southeast Drainage Basins Office. The report states, "It is designed to show the progress which has been made individually and collectively in conserving one of our greatest natural resources--the streams of the State". The report lists in tabular form:

1. Number of cities with and without sewage treatment
2. Number of cities which constructed sewage works

during the past 15 years.

3. The cities previously having no sewers which have constructed sewage works in past 15 years.

4. The cities for which Engineering Reports on sewage have been made.

5. The number of sewage treatment plants in Georgia by five-year intervals.

6. A list of cities preparing to treat their sewage, and

7. A listing of existing sewage treatment plants.

The information contained in Tables A through I, inclusive, is incomplete. The data concerning the industries of the State was obtained from "Manufacturers of Georgia" prepared by the Georgia Agricultural and Industrial Development Board, supplemented by the Georgia State Department of Commerce. The information concerning municipalities is from "Georgia Water Pollution Comprehensive Report" to municipalities of the State.

TABLE A (32)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	0	-	-
Having population data available (Data on pollution load to watercourse incomplete or not available)	29	83,825	Not applicable
TOTAL	29	83,825	XXXXXX

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (32)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharge to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	0	-
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	*89	Undetermined
TOTAL	89	xxx xxx

* Industries (only those type normally considered to discharge wastes with polluting characteristics) located in the sub basin, which may or may not have separate outlets. Information obtained from "Manufacturers of Georgia" prepared by the Georgia Agriculture and Industrial Development Board and supplemented by information from the Georgia State Department of Commerce.

TABLE $C_{(32)}$

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	12	12	12,850
Secondary	5	5	25,800
No Treatment	12	XXX	45,175

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D
(32)
EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	34	0	0	34
Textile Mill Products	5	0	0	5
Lumber and Wood Products	1	0	0	1
Paper and Allied Products	1	0	0	1
Chemical and Allied Products	42	0	0	42
Fabricated Metal Products	1	0	0	1
Miscellaneous	5	0	0	5

* The industrial plants, listed by type, are from the "Manufacturers of Georgia"(prepared by the Georgia Agricultural and Industrial Development Board) selected as those industries within the sub-basin probably contributing to the pollution of the streams. They may or may not have separate waste outlets discharging directly to watercourse.

TABLE E (32)

ADEQUACY OF EXISTING TREATMENT FACILITIES *

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	17	0	0	17	0	0	17
Industrial	0	-	-	-	-	-	-

* The Georgia Water Pollution Control Agency has made no report.

TABLE F (32)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	1	1,025	0	-
1947	0	-	0	-
1948	1	10,000	0	-
1949	1	2,000	0	-

TABLE G (32)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS *

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	0	-	0
Enlargement or Additions to Existing Plant	0	-	0
Replace Existing Plant	0	-	0
No Project Required	0	-	0
Undetermined	29	83,825	89

* The Georgia Water Pollution Control Agency has made no report.

TABLE H (32)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION *

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	0	0
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	29	89

* The Georgia Water Pollution Control Agency has made no report.

TABLE I (32)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION *

July 1, 1950

* The Georgia Water Pollution Control Agency has made no report.

SUB-BASIN 33

CHATTAHOOCHEE RIVER BASIN

GENERAL DESCRIPTION

The Chattahoochee River Basin is bounded on the north by the Tennessee River Basin; on the east by the Savannah, Oconee, Ocmulgee, and Flint River Basins; on the south by the Apalachicola River Basin; and on the west by the Choctawhatchee, Tallapoosa, and Coosa River Basins.

The Chattahoochee River drains approximately 8,647 square miles including 5,992 square miles of Georgia, 2,537 square miles of southeastern Alabama, and 118 square miles of Florida. The river arises in the Blue Ridge Mountains of northeastern Georgia and flows 436 miles to its confluence with the Flint River at the southwest corner of Georgia. The river is the west boundary of Georgia south of West Point, Georgia. Its watershed lies in three distinct physiographic provinces, the Appalachian Highland, the Piedmont Plateau, and the Coastal Plain. In the first two named, numerous hills and mountains rise 2,500 to 3,000 feet.

The upper reaches of the Chattahoochee River are characterized by the steep slopes of mountain streams, but below Gainesville, Georgia the slope is farily uniform, averaging 2.6 feet per mile to the Alabama State line. The river falls 397 feet between this point and Columbus, Georgia, an average slope of 10 feet per mile. A slope of 0.9 foot per mile is obtained in the 145 feet of fall from Columbus to the mouth. The banks are steep and high, attaining the eminences of bluffs in some places. The course of the river is characterized by unusually long and straight reaches through the middle of the valley.

The Chattahoochee River Basin is characterized by its lack of important tributaries, which is reflected in its narrow width (averaging 28 miles with a maximum of 55 miles), and its length (approximately 320 miles).

Average annual rainfall varies from about 61 inches in the north to 49 inches in the mid portion to almost 54 inches near its confluence with the Flint River. A nineteen year record of the U.S. Geological Survey gauge at Columbia, Alabama, where the drainage area is 8,040 square miles, shows the average discharge to be 5,791 cubic feet per second. The maximum recorded discharge at this point was 203,000 cubic feet per second, and the minimum discharge recorded was 1,220 cubic feet per second.

The mean annual temperature for the area varies from 59 degrees to 67 degrees depending on latitude. The frost free growing season averages 214 days in the north and 250 days in the south.

The total population of the basin based upon the 1940 census was approximately 742,050. The preliminary 1950 census reports indicate a population of 877,113.

ECONOMIC DEVELOPMENT

The basin contains 18 urban communities three of which are in Alabama and the remainder in Georgia. These communities constitute 49 percent of the total population in 1950 as compared with 48 percent in 1940. The decade since 1940 has seen an increase in both rural and urban population.

The economy of the basin is one of combined agriculture and industry. The major agricultural products are peanuts, cotton, corn, peaches, truck crops, hogs and cattle, with the first two being the leading money crops. Poultry raising (broiler production) is a growing industry in the foothills of the mountains at the headwaters of the Chattahoochee River. An important part of Georgia's peach production comes from that portion of the valley between Atlanta and the Alabama State line.

Textiles comprise the major industry of the basin both in Alabama and in Georgia. Important textile centers are Lanett, Shawmut, Langdale, Fairfax, River View, Phenix City, and Eufaula in Alabama; and Columbus, Marietta, Newnan, Douglasville, Atlanta, Gainesville, La Grange, and Hogansville in Georgia. Other major types of industry of importance in the basin are furniture manufacturing, lumber and wood products, chemicals, implements and machinery, metal working, transportation, and food processing.

The City of Atlanta, Georgia is the metropolis of the basin and in addition is the chief trading and railroad center of the State of Georgia. It is also the seat of State government. However, one third of Atlanta lies outside of the Chattahoochee River Basin.

USE OF WATER RESOURCES

Ground water is inadequate as a source of public water supply in the upper reaches of the basin. Out of a total of fifty-three public water supplies, twenty-seven are from surface sources which serve a total of 618,415 people, or ninety-four percent of the total population served by public water supplies. In the coastal plain section of the basin, however, ground water is abundant and is used as a source of public water supply.

The topography of the Chattahoochee River Basin is such that extensive hydroelectric development is possible. Seven low dams for gydroelectric purposes, all inter-state in location, have been built along less than forty miles of river between Columbus and West Point, Georgia. Another low hydroelectric dam exists at Morgan Falls above Atlanta, Georgia.

Plans have been approved and construction authorized for the further development of the river for navigation, hydroelectric and flood control. Jim Woodruff Dam, now under construction on the Apalachicola River just below the junction of the Chattahoochee and Flint Rivers, will impound a reservoir of 37,500 acres. Dams authorized for construction near Columbia, Alabama and at Fort Benning, Georgia will impound 34,500 acres and 1,250 acres respectively, and with Jim Woodruff Dam, will make possible a nine foot navigable channel to Columbus, Georgia approximately one hundred and sixty miles above the mouth of the river. A dam also is under construction near Buford, Georgia which will impound a reservoir of 34,300 acres. It is anticipated that extensive recreational development will accompany the impoundment of these reservoirs.

Recreational developments at present, however, are limited. Bartletts Ferry Reservoir above Columbus, Georgia has been rather extensively developed, with swimming, fishing and boating as the major recreational attractions. A number of headwater streams in the northern mountains provide trout fishing. The river where not impounded, however, has a high velocity which makes swimming and boating dangerous.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Table A through I, inclusive. Information on the State of Georgia concerning the adequacy of existing treatment facilities, requirements for municipal and industrial waste treatment plants, the status of treatment works projects to abate pollution, and municipalities and industries requiring improvements for abatement of pollution is lacking in Tables E,G,H, and I as this data has not been furnished this office by the Georgia Water Pollution Control Agency.

Forty-four municipalities with a total sewered population of 401,815 discharge pollution to watercourses of the basin. Fourteen of these communities, having a sewered population of 32,585 discharge sewage and industrial wastes having a population equivalent of 82,760. No population equivalent data was available to this office for thirty Georgia communities having a combined population of 369,230.

A total of eighty-four industries of the type normally considered to discharge wastes with polluting characteristics are located within the basin. Eighty-two* of these are located in Georgia and produce wastes of an undetermined type, but may or may not have separate outlets and may or may not have treatment facilities. The two remaining industries,located in Alabama, produce organic waste having a population equivalent of 14,250 and do not treat their waste.

Sixteen of forty-four communities have nineteen primary treatment plants serving a population of 231,100. Nine communities (one also included with those having primary treatment) have twelve secondary treatment plants serving 47,180 persons. Twenty communities not providing treatment serve 123,535 people.

The Alabama portion of the basin has one municipal treatment plant. The operation of this facility is satisfactory but adequacy in relation to design capacity is unsatisfactory. The design capacity and operation of treatment plants in Georgia is reported undetermined as the Georgia Water Pollution Control Agency has not submitted this information.

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* Information obtained from "Manufacturers of Georgia" prepared by the Georgia Agricultural and Industrial Board supplemented by information from the Georgia State Department of Commerce.

There have been six municipal treatment plants constructed in the period 1946 through 1949 to serve a total of 9,900 people. Twelve new municipal plants to serve 29,085 people and an addition to one plant serving 2,500 persons are required to abate pollution from the Alabama part of the basin and no project is necessary at one municipality serving 1,000 persons. The needs of thirty municipalities serving 369,230 people in Georgia are unreported to this office. Two Alabama industrial plants need new waste treatment plants and the needs of eighty-two are undetermined.

No formal action to abate pollution has been taken with thirteen municipalities and two industrial plants. The status of thirty municipalities and eighty-two industries is undetermined.

TABLE A(33)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	14	32,585	82,760
Having population data available (Data on pollution load to watercourse incomplete or not available)	**30	369,230	Not applicable
TOTAL	44	401,815	X X X X X X

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Georgia Municipalities

TABLE B (33)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharge to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	2	14,250
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	*82	Undetermined
TOTAL	84	xxx xxx

* Industries (only those types normally considered to discharge wastes with polluting characteristics) located in the Georgia portion of the sub-basin, which may or may not have separate outlets. Information obtained from "Manufactures of Georgia" prepared by the Georgia Agricultural and Industrial Development Board and supplemented by information from the Georgia State Department of Commerce.

TABLE C(33)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	16	19	231,100
Secondary	** 9	12	47,180
No Treatment	20	XXXX	123,535

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** One municipality also included in primary treatment.

TABLE D (33)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	38	0	1	37
Textile Mill Products	22	0	1	21
Lumber & Wood Products	1	0	0	1
Chemical and Allied Products	18	0	0	18
Products of Petroleum and Coal	1	0	0	1
Leather and Leather Products	1	0	0	1
Miscellaneous	3	0	0	3

* Industries having separate outlets and discharging wastes directly to watercourse.

** Information for the two plants in Alabama furnished by the Alabama Water Improvement Advisory Commission.

TABLE E(33)

ADEQUACY OF EXISTING TREATMENT FACILITIES *

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	20	0	1	19	1	0	19
Industrial	0	-	-	-	-	-	-

* No report for Georgia portion of sub-basin.

TABLE F (33)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	1	600	0	-
1947	2	6,000	0	-
1948	2	1,700	0	-
1949	1	1,600	0	-

TABLE G(33)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements*	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	12	29,085	2
Enlargement or Additions to Existing Plant	1	2,500	0
Replace Existing Plant	0	0	0
No Project Required	1	1,000	0
Undetermined*	30	369,230	82

* No report for Georgia portion of sub-basin.

TABLE H (33)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	13	2
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined*	30	82

* No report for Georgia portion of sub-basin.

TABLE I(33)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION *

July 1,1950

Name	Population Served	Project Requirements	Remarks
Abbeville, Ala.	2,025	New Plant	Some Industrial Wastes
Columbia, Ala.	500	New Plant	
Eufaula, Ala.	3,800	New Plant	Some Industrial Wastes
Fairfax, Ala.	2,500	Addition to Plant	
Headland, Ala.	450	New Plant	
Hurtsboro, Ala.	750	New Plant	
LaFayette, Ala.	800	New Plant	
Lanett, Ala.	6,450	New Plant	Has Textile Wastes with Population Equiv. of 50,000
Langdale, Ala.	100	New Plant	
Phenix City, Ala.	9,800	New Plant	
Riverview, Ala.	785	New Plant	
Roanoke, Ala.	200	New Plant	
Shawmut, Ala.	4,450	New Plant	Includes part of Langdale

* No Report for Georgia portion of Sub-basin.

SUB-BASIN 34

APALACHICOLA RIVER BASIN

GENERAL DESCRIPTION

The Apalachicola River Basin is bounded on the northeast by the Chattahoochee and Flint River Basins, on the east by the Ochlockonee-St. Marks River Basin, on the south by the Gulf of Mexico, and on the west by the Choctawhatchee River Basin.

The Apalachicola, the largest fresh-water river in the State of Florida, is formed by the confluence of the Chattahoochee and Flint Rivers at the southwest corner of the State of Georgia from whence it flows in a southerly direction to the Gulf of Mexico. It is a wide, shallow, meandering stream which carries a heavy silt load from the clay hills of Georgia and Alabama, and flows through a broad valley of extensive swamps. The Chipola River, the only major tributary in the basin, arises in southeastern Alabama.

The total area within the basin is 2,453 square miles, of which 321 square miles are in Alabama.

Average annual rainfall in the basin varies from 55 inches to nearly 59 inches. A nineteen year record of the U.S. Geological Survey gauge at Chattahoochee, Florida, which is near the source of the Apalachicola River and has a drainage area of 17,100 square miles, shows the average discharge to be 21,950 cubic feet per second. The maximum discharge at this point was 293,000 cubic feet per second, and the minimum was 5,120 cubic feet per second.

The climate is temperate and is characterized by bountiful, but not excessive, rainfall. The annual mean temperature is about 68 degrees. The average number of days without frost is 250 to 280, but continuous periods of several years occur in which there is no frost.

The total population of the basin based upon the 1940 census was 71,016. The preliminary census of 1950 indicates a population of 71,829.

ECONOMIC DEVELOPMENT

The basin contains four urban communities, all in Florida, having a combined 1950 population of 20,240, or 28% of the total basin population.

The chief source of livelihood in the basin is agriculture. Peanuts, cotton, corn, tobacco, hogs, and cattle are the principal products. In the southern part of the area a large proportion of the total income is from timber and fishing. A large paper mill is located at Port St.Joe.

USE OF WATER RESOURCES

There are fourteen public water supplies in the basin, only one is a surface water supply serving 7,000 people.

Water resources are being utilized at Marianna, Florida where a stream has been dammed for power purposes, and at Apalachicola, Florida, where the principal industry is commercial fishing and oystering. However, oystering in Apalachicola Bay is greatly restricted because of pollution.

A dam is under construction at Chattahoochee, Florida which will be for combined power, and navigation. The streams are utilized for a limited amount of commerce, principally the transportation of logs.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Tables A through I, inclusive.

Ten municipalities with a total sewered population of 22,100 discharge pollution to watercourses of the basin. Five of these municipalities have primary treatment plants which serve a population of 12,900. Five have secondary treatment serving 9,200 people.

Two industries producing organic waste having a population equivalent of 88,120 discharge untreated waste directly to streams.

The design capacity of six of ten municipal treatment plants is adequate and four are unsatisfactory. Four are satisfactory with relation to operation and six are unsatisfactory.

Three new municipal treatment plants having a total design population of 7,750 were completed in 1949. Construction of four new replacement plants to serve a population of 7,040 is necessary to abate pollution in the basin. No project is required at seven municipalities having a sewered population of 16,200. One new industrial waste treatment plant is required and the requirements of one remains undetermined.

No formal action for the abatement of pollution has been taken with three municipalities and two industries. The status of one municipality is undetermined.

TABLE A(3L)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	1	300	30
Having population data available (Data on pollution load to watercourse incomplete or not available)	9	21,800	Not applicable
TOTAL	10	22,100	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (34)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	2	88,120
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	2	xxx xxx

TABLE C(34)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number		
	Municipalities*	Plants	Population Served
Primary	5	5	12,900
Secondary	5	5	9,200
No Treatment	0	XXXX	-

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D (34)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	1	-	1	-
Paper and Allied Products	1	-	1	-

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E (34)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	10	6	4	0	4	6	0
Industrial	0	-	-	-	-	-	-

TABLE F(34)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	3	7,750	0	-

TABLE G (34)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	* 4	7,040	0
Enlargement or Additions to Existing Plant	0	-	0
Replace Existing Plant	0	-	0
No Project Required	7	16,200	0
Undetermined	0	-	0

* Includes one municipality with no sewers for which sewers and treatment is recommended.

TABLE H (34)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	3	2
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	1	0

TABLE I(34)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama			
Municipalities			
None			
Industries			
Food & Kindred Products	120	One New Plant	
Florida			
Municipalities			
Blountstown	1,500	New Plant	
Chattahoochee	4,000	New Plant	
Cottondale	400	New Plant	
Wewahitchka	1,140	Sewer and Treatment	No municipal sewers
Industries			
Paper & Allied Products	88,000	One Undetermined	

SUB-BASIN 35

CHOCTAWHATCHEE RIVER BASIN

GENERAL DESCRIPTION

The Choctawhatchee River Basin is bounded on the north by the Tallapoosa River BAsin, on the east by the Chattahoochee and Apalachicola River Basins, on the south by the Gulf of Mexico, and on the west by the Perdido-Escambia River Basin. The river is formed in the Coastal Plain of southeastern Alabama and flows southwesterly some ninety miles prior to entering Florida, and thence about another ninety-five miles to enter Choctawhatchee Bay and the Gulf of Mexico. The major tributaries are the Pea River and Holmes Creek. In addition, a number of small coastal streams flow into Choctawhatchee Bay.

The total drainage area is about 6,415 square miles which is almost equally divided between the States of Alabama and Florida. The northern part of the basin is characterised by rolling clay hills, while the southern part is more level and is dotted by swampy areas.

Average annual rainfall varies from about 52 inches in the northern part of the basin to almost 66 inches in the southern part. A seventeen year record of the U.S. Geological Survey gauge near Bruce, Florida, where the drainage area is 4,580 square miles, shows the average discharge to be 7,297 cubic feet per second. The maximum discharge at this point was

69,600 cubic feet per second, and the minimum discharge recorded was 1,680 cubic feet per second.

The mean annual temperature of this area varies from sixty-five to 68 degrees. The average number of frost free days varies from 250 to 300 days.

The total population of the basin based upon the 1940 census was approximately 226,284. The preliminary census of 1950 indicates the population to be 241,755, an increase of six percent from the 1940 population.

ECONOMIC DEVELOPMENT

The basin contains eleven urban communities, eight of which are in Alabama. These eleven urban communities constitute, on the basis of the 1950 preliminary census, approximately 36 percent of the total population.

The basin is primarily an agricultural area. Major agricultural products are peanuts, cotton, corn, truck crops, hogs, and cattle. The southern part of the area is mainly uncleared timber land with some stock raising.

Commercial fishing areas exist along the coast. Oysters are obtained commercially from tributary arms of St. Andrews Bay.

Industries consist of textile and fertilizer manufacturing, meat packing, and the refining of peanut and cotton seed oils. A large paper mill is located at Panama City, Florida. This city also has a sizable sea port. The tourist industry is developing rapidly along the gulf coast.

USE OF WATER RESOURCES

The Choctawhatchee River Basin is richly supplied with both ground and surface waters. There are thirty-four public water supplies in the basin all taken from ground sources.

The principal water resources use is recreation and commercial fishing. The streams are very popular for sport fishing, and those near population centers are used also for swimming. Important seaside recreational developments exist in the vicinity of Panama City, Florida. In the Alabama portion of the basin, Lake Tholocco is the major recreational area.

A single low dam on the Pea River below Elba, Alabama, is the only hydro-electric development in the basin.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Tables A through I, inclusive.

Twenty-six municipalities with a total sewered population of 60,455 and two municipalities for which no population served data are available discharge pollution to watercourses of the basin. Seven industries discharge waste directly to streams. One of these industries produces organic waste having a population equivalent of 280,000, a figure greater than the entire population of the basin, both sewered and unsewered. Five industries produce organic waste in undetermined amounts, and one produces inorganic waste.

Thirteen of the twenty-eight sewered municipalities have 14 primary treatment plants serving a population of 35,490, four have secondary treatment plants serving 2,350 people, and twelve* with a population of 22,615 have no treatment facilities. Of the seven industrial sources of pollution, four have waste treatment facilities, two have no treatment and one has undetermined facilities.

The design capacity of seven municipal treatment plants is satisfactory, and that of the remaining eleven is unsatisfactory. Operation at eleven of these plants is satisfactory and is unsatisfactory at seven. The adequacy of capacity of four industrial plants and the adequacy of operation of three of these are undetermined. The operation of the remaining one is unsatisfactory.

There have been no municipal or industrial waste treatment plants constructed during the period 1946 through 1949. The requirements for industrial waste treatment plants are undetermined. Construction of fifteen new municipal sewage treatment plants to serve a population of 26,900, additions at four plants serving a population of 20,500, and replacement of three existing plants serving 3,050 people are necessary to abate pollution in the basin. No project is required at five municipalities having a sewered population of 10,415 or at two other municipalities for which no population served figures are available.

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* One municipality reported as also having secondary treatment for part of its sewage.

Plans are under preparation at three municipalities for construction of treatment plants. The final plans have been approved for two other plants, but construction is awaiting financing. Abatement has been ordered at one municipality. No formal action has been taken in regard to sixteen municipalities and five industrial plants. The status of two other industrial plants remains undetermined.

TABLE A (35)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	17	43,015	41,315
Having population data available (Data on pollution load to watercourse incomplete or not available)	9	17,440	Not Applicable
TOTAL	** 28	60,455	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

**Includes two municipalities for which no population served figures are available.

TABLE B(35)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharge to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	1	280,000
Producing Organic Wastes	5	Undetermined
Producing Inorganic Wastes	1	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	7	xxx xxx

TABLE C (35)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	13	14	35,490
Secondary	** 4	4	2,350
No Treatment	12	XXXX	22,615

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes two municipalities for which no population served figures are available. One other municipality also listed under two classifications.

TABLE D(35)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	5	3	1	1
Chemical and Allied Products	1	0	1	0
Paper & Allied Products	1	1	0	0

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(35)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	18	7	11	0	11	7	0
Industrial	4	0	0	4	0	1	3

TABLE F (35)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G (35)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	* 15	26,490	0
Enlargement or Additions to Existing Plant	4	20,500	0
Replace Existing Plant	3	3,050	0
No Project Required	** 7	10,415	0
Undetermined	0	-	7

* One of the new plants will treat wastes, from two outfall sewers.

** Includes two municipalities for which no population served figures are available.

TABLE H(35)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	16	5
Abatement Ordered	1	0
Plans under Preparation	3	0
Final Plans Approved	0	0
Construction Awaiting Financing	2	0
Under Construction	0	0
Status Undetermined	0	2

TABLE I(35)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirement	Remarks
Alabama Municipalities			
Brundige	1,500	New Plant	
Clayton	1,100	Repair Existing Plant	
Clio	400	Additions to Plant	
Dothan	16,500	Additions to Plant	
Elba	1,900	New Plant	
Enterprise	2,500	New Plant	Plans under Preparation
Enterprise	2,500	New Plant	Plans under Preparation
Florala	1,200	New Plant	
Geneva	2,000	New Plant	
Hartford	1,200	Replace Existing Plant	
Headland	450	New Plant	
Ozark	2,500	New Plant	
Samson	1,500	New Plant	
Slocomb	750	Replace Existing Plant	
Troy	4,500	New Plant	
Troy State Teachers College	1,100	Additions to Plant	

2-I-35

Name	Population Served	Project Requirement	Remarks
Alabama			
Industries			
Four Food and Kindred Products	450 for one plant. Others undetermined	Undetermined	
One Chemical and Allied Products	Not Known	Undetermined	
Florida			
Municipalities			
Bonifay	800	New Plant	
Chipley	2,100	New Plant	To handle works from two outfall sewers. Constr. awaiting financing.
Defuniak Springs	1,000	New Plant	Plans under Preparation
Graceville	840	New Plant	
Lynn Haven	200	New Plant	Abatement Ordered Constr. awaiting financing.
Panama City	2,500	New Plant	
Industries			
One Food and Kindred Products	Not Known	Undetermined	
One Paper and Allied Products	280,000	Undetermined	

SUB-BASIN 36

PERDIDO-ESCAMBIA RIVER BASIN

GENERAL DESCRIPTION

The Perdido-Escambia River Basin is bounded on the north by the Tallapoosa River Basin, on the east by the Choctawhatchee River Basin, on the south by the Gulf of Mexico, on the west by the Mobile Bay Area, and on the northwest by the Alabama River Basin. The basin comprises an area of 7,935 square mile, of which 5,282 are in Alabama; and 2,653 lie in Florida.

The drainage of the basin is accomplished by four principal rivers, all arising in southern Alabama, and a number of small coastal streams. These principal rivers are the Perdido on the west, which forms part of the Alabama-Florida State boundary and has a water-shed area of 1,110 square miles; the Escambia which with its chief tributary, the Conecuh, drains an area of 4,240 square miles; the Blackwater, with a water-shed of 850 square miles; and in the eastern part of the basin, the Yellow which has a drainage area of 1,385 square miles. The entire area lies within the Coastal Plain and is characterized by low rolling clay hills with comparatively high bluffs along the water courses.

The mean annual rainfall varies from about 53 inches in the northern part of the basin to approximately 58 inches at the coast. Inland from the coast approximately 20 miles, however, the rainfall averages about 10 inches greater annually. A thirteen year record at the U.S. Geological Survey gauge on the Escambia River at Century, Florida, having a drainage area of 3,700 square miles indicates the average flow to be 6,841 cubic feet per second. A maximum flow of 73,900 cubic feet per second, and a minimum flow of 810 cubic feet per second have been recorded there.

The Perdido-Escambia Basin has a climate which is typically temperate and humid. The mean annual temperature varies from about 65 degrees in the north to nearly 68 degrees at the coast. The frost free season varies from 250 to 300 days.

ECONOMIC DEVELOPMENT

The basin population according to the 1940 census was approximately 281,905, of which 21 percent were urban. The preliminary 1950 census indicates the population to be 322,465, and the urban population to have increased to 27 percent of the total. In 1950 there were nine urban communities in the area, seven of them in Alabama and the remainder in Florida, having a total population of 146,654. The principal urban community in the basin is Pensacola, Florida, which has a population of 43,293.

The basin is mostly one of agriculture producing peanuts, cotton,corn, truck crops, tung oil, satsumas, hogs and cattle. The Perdido River Valley is a large producer of white potatoes. Butler, Conecuh and Escambia Counties in Alabama are important strawberry growing centers. The flat lands along the coast are largely uncleared and are used mostly for timber production and livestock raising. The wildlife resources of the area are reported to be extensive.

The major industry of the area is lumbering together with associated activities. Pensacola, Florida is the chief industrial center of the area, where there are several fertilizer plants, a number of lumber mills, a creosote manufacturing plant, and a paper mill.

Pensacola ranks as one of the most important seaports on the eastern Gulf Coast, exporting coal and general merchandise and importing fruits and fertilizers. Shipbuilding and repair shops exist there, and it provides harborage for an extensive fishing fleet.

USE OF WATER RESOURCES

The area is well supplied with both surface and ground waters. None of the thirty municipal water supplies in the basin, which serve a population of 120,665, are taken from surface sources.

Two dams have been built on the Conecuh River in Alabama for hydroelectric purposes, the dam at Gantt impounding an area of 1,600 acres and one at River Falls creating a 600 acre reservoir. Both are utilized extensively for swimming, boating and fishing.

The surface water resources of the area have been utilized primarily for sport and commercial fishing, oyster production and swimming, particularly along the Gulf Coast where a number of fine beaches have been developed.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A through I, inclusive.

Twenty-three municipalities with a sewered population of 101,660, and one municipality for which the number of persons served by sewers is unknown, discharge polluting effluents to watercourses of the basin.

Sixteen industries discharge waste directly to watercourses, two of which produce waste of an undetermined type and two produce organic waste of an undetermined amount.

Ten of the twenty-four municipalities have thirteen primary treatment plants which serve a population of 73,750. Three municipalities have secondary treatment plants serving 7,400 people and the population served by one-fourth is not available for inclusion in this report. Ten communities serving a population of 20,510, five of which have multiple outlets, have no treatment. Of the sixteen industrial plants in the basin, one provides treatment, two have no treatment facilities, and the facilities of thirteen are undetermined.

The design capacity of six municipal treatment plants is satisfactory, ten are unsatisfactory and one is undetermined. Operation of thirteen is satisfactory, three are unsatisfactorily operated, and the operation of one remains unclassified. The one industrial waste treatment plant is unsatisfactory in capacity but is satisfactorily operated.

There were two municipal treatment plants having a design population of 6,500 constructed during the period 1946-49, but no industrial waste treatment plants were constructed during that period. Nine new municipal treatment plants to serve a population of 25,960 and one new industrial waste treatment plant are required. Enlargements or additions are required to three municipal plants to serve 42,400 people, and to one industrial plant. Two municipal plants serving 7,500 people should be replaced. No project is required at seven municipalities with a popula-

36-5

tion of 25,800 or at one whose population is unavailable. The requirements of fourteen industrial plants are undetermined.

Plans are being prepared at one municipality for construction of waste treatment facilities. No formal action has been taken toward the correction of municipal or industrial pollution in other instances where needed.

TABLE A(36)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	16	37,760	31,985
Having population data available (Data on pollution load to watercourse incomplete or not available)	7	63,900	Not applicable
TOTAL	**24	101,660	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

**Includes one municipality for which no population served figure is available.

TABLE B (36)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	1	88,000
Producing Organic Wastes	11	Undetermined
Producing Inorganic Wastes	2	Not Applicable
Producing Wastes of Undetermined Type	2	Undetermined
TOTAL	16	xxx xxx

TABLE C (36)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	10	13	73,750
Secondary	** 4	4	7,400
No Treatment	*** 10	XXXX	20,510

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes one municipality for which no population served figures are available.

*** Five municipalities have multiple outlets.

TABLE D (36)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	7	1	2	4
Textile mill Products	1	0	0	1
Paper & Allied Products	2	0	0	2
Chemical & Allied Products	6	0	0	6

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(36)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	17	6	10	1	13	3	1
Industrial	1	0	1	0	1	0	0

TABLE F(36)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	1	4,500	0	-
1948	1	2,000	0	-
1949	0	-	0	-

TABLE G (36)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	*Number	Population Served by Facilities	Number
New Plant	9	25,960	1
Enlargement or Additions to Existing Plant	3	42,400	1
Replace Existing Plant	2	7,500	0
No Project Required	** 8	25,800	0
Undetermined	0	-	14

* Number includes five municipalities with multiple requirements.

** Includes one municipality for which no population served figure is availablle.

TABLE H (36)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	23	16
Abatement Ordered	0	0
Plans under Preparation	1	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	0	0

TABLE I (36)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama			
Municipalities			
Andalusia	7,500	Replacement of Two Existing Plants	
Atmore Prison	1,000	New Plant	
Brantley	1,000	New Plant	
Brewton	2,200	Two New Plants	Two Outfall Sewers
Evergreen	3,250	Three New Plants	Three Septic Tanks
Flomaton	1,010	Two New Plants	Two Outfall Sewers
Foley	1,400	Additions to Existing Plant	
Georgiana	1,000	Additions to Existing Plant	
Greenville	6,000	Two New Plants	Two Outfall Sewers
Lockhart	200	New Plant	
Luverne	1,600	New Plant	
Opp	2,500	Two New Plants	Two Outfall Sewers
Robertsdale	700	New Plant	
Troy	4,500	Two New Plants	Two Outfall Sewers
Industries			
Food & Kindred Products	1,825	One New Plant One addition One undetermined	
Textile Mill Products	Not Known	Undetermined	

Name	Population Served	Project Requirements	Remarks
Florida **Municipalities**			
Crestview	2,000	New Plant	
Pensacola	40,000	Enlargement and Additions to Existing Plant	Plans under Preparation
Industries			
Food & Kindred Products	Unknown	Four Undetermined	
Paper & Allied Products	Unknown	Two Undetermined	
Chemical & Allied Products	Unknown	Six Undetermined	

SUB-BASIN 37

TALLAPOOSA RIVER BASIN

GENERAL DESCRIPTION

The Tallapoosa River Basin is bounded on the north and west by the Coosa River Basin, on the east by the Chattahoochee River Basin, and on the south by the Alabama and Perdido-Escambia River Basins. The drainage area of the basin is about 4,600 square miles of which 607 square miles lie in Georgia.

The Tallapoosa River rises in Carroll County and flows in a number of westerly and southerly courses to its confluence with the Coosa River where the two form the Alabama River in central Alabama. Principal tributaries are the Little Tallapoosa, Hillabee Creek, Sandy Creek, Sougahatchee, Uphapee Creek, Calebee Creek, and Oakfuskee Creek.

The total length of the main river is 268 miles of which the upper fifty miles are in Georgia. The upper part of the basin is a plateau area in northwestern Georgia and eastern Alabama, comprised mostly of low hills with elevations of less than 1,250 feet. The drainage basin includes a part of the Cheaha Mountains with elevations as high as 2,400 feet. The river below Tallassee, Alabama flows through the Coastal Plain.

The mean annual rainfall in the basin is about fifty-four inches. A nineteen year record at the U.S. Geological Survey gauge below Tallassee, Alabama, with a drainage area of 3,320 square miles, shows the average discharge at this point to be 4,809 cubic feet per second. Flows at this point have been regulated by Alabama Power Company dams on the main river.

The maximum flow recorded was 115,000 cubic feet per second, and the minimum was ten cubic feet per second.

The factors controlling the climate of the basin are geographic position and elevation. The annual mean temperature for the northern part of the basin is about sixty degrees, while that near the mouth of the river is sixty-five degrees. The frost free growing season varies in length from 198 days in the north to 233 days for the southern part.

The 1940 census indicates there were approximately 219,142 persons living in the basin, of which eighty-two percent were living in Alabama. The preliminary 1950 census indicates a population of 223,462 in the basin.

ECONOMIC DEVELOPMENT

There are eight urban communities within the basin, two in Georgia, and six in Alabama. The urban 1950 population of the eight municipalities was 57,693, approximately twenty-six percent of the total basin population.

The basin has developed from an agricultural area into one with a combined agricultural and industrial economy. The Piedmont, Lower Coastal Plain, and Black Belt soils of the basin produce a diversity of crops. Nearly one-half of the land in the Alabama portion of the area is in forest. Pulp wood is an important product of these forests.

The principal field crops of the area are cotton, corn, hay, and produce for home use. There is an increase in cattle raising, both beef and dairy, especially in the Black Belt area which is especially suited to pastures.

The principal type of industry in nine of the fifteen counties is the textile industry which employs over half of the industrial force in the basin.

Textile mills are located at Carrollton, Tallapoosa and Temple in Georgia, and Alexander City, Opelika, Pepperell, Roanoke, and Tallassee in Alabama. The lumber and wood products industry has the largest number of establishments in the area with sixty in Alabama and fifteen in Georgia. The apparel and finished textile products group has sixteen establishments and there are forty-three food processing plants. These four leading industrial groups utilize agricultural products of the basin.

USE OF WATER RESOURCES

In general the ground water of the basin is limited as a source of public water supply. There are thirty-one public water supplies in the basin. Surface water is the source for twenty-one supplies which serve 83,925 people, eighty-four percent of those served by all public supplies.

A variety of recreational opportunities exist in the area. Chewacla State Park in Alabama with a small lake provides facilities for swimming, boating, fishing and camping. A recently constructed lake near Delta, Alabama, provides similar facilities as does Lake Martin and several river sites in Georgia.

Three hydro-electric plants are operated by the Alabama Power Company on the Tallapoosa River. Martin Dam, located north of East Tallassee is capable of storing over 1,600,000 acre feet of water, and has an area of approximately sixty-four square miles. Thurlow and Yates Dam are located farther down stream and are smaller. Several suitable sites for future dam construction exist in the upper part of the basin.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A through I, inclusive.

There are twenty-six municipal sources of pollution in the basin. In Alabama, twenty-two of these are contributed to by a population of 60,120, and discharge an effluent after treatment having a population equivalent of 44,975. The pollution dischargedto watercourses of the basin by the four Georgia municipalities having sewage systems serving 9,730 persons is undetermined.

Three industrial establishments in Alabama discharge wastes of an organic nature amounting to a population equivalent of 38,000. The amount of pollution from nine industries located in the Georgia portion of the basin, which are normally considered to discharge wastes with pollution characteristics and which may or may not have separate outlets, is undetermined.

Existing treatment facilities in the basin consist of sixteen primary treatment plants at fourteen municipalities serving a population of 28,950; and five secondary treatment plants at five communities which serve a population of 8,315. Ten municipalities having a population of 32,585 discharge domestic sewage without treatment.

No treatment facilities are provided at the three industrial establishments in Alabama that produce textile mill products. No information as to the treatment facilities provided at the nine industrial establishments in Georgia, which may or may not discharge direct to a watercourse, has been given by the Georgia Water Pollution Control Agency.

Four of the sixteen municipal sewage treatment plants in Alabama are reported as adequate with relation to capacity, and twelve are satisfactorily operated. The Georgia Water Pollution Control Agency has furnished no information as to adequacy of the five municipal treatment plants in Georgia.

One municipal sewage treatment plant designed to serve 3,000 was completed in 1947. No industrial waste treatment plants are reported as completed during the period 1946 through 1949.

Requirements for municipal sewage treatment plants in the basin consist of eleven new plants to serve a population of 26,675, enlargement or addition to ten existing plants serving a population of 24,475 and replacement of one existing plant with a connected population of 3,000. No project is required at four municipalities in Alabama having a total population of 5,610. The requirements at five municipalities in Georgia having a population of 10,090 is not reported. In Alabama three new industrial waste treatment plants are needed. Requirements at nine industrial establishments in Georgia are undetermined.

In the Alabama portion of the basin one industrial waste treatment plant is under construction and plans are under preparation by one municipality for sewage treatment. The status of municipal and industrial treatment works projects in Georgia has not been reported by the Georgia Water Pollution Control Agency.

TABLE A(37)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People
Having data on pollution load discharged to watercourse	22	60,120	44,975
Having population data available (Data on pollution load to watercourse incomplete or not available)	** 4	9,730	Not Applicable
TOTAL	26	69,850	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Georgia Municipalities

TABLE B (37)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse(In Terms of Equiv. No. of People)
Producing Organic Wastes	3	38,000
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	* 9	Undetermined
TOTAL	12	XXX XXX

* Industries (only those types normally considered to discharge wastes with polluting characteristics) located in the Georgia portion of the sub-basin, which may or may not have separate outlets. Information obtained from "Manufactures of Georgia" prepared by the Georgia Agricultural and Industrial Development Board and supplemented by information from the Georgia State Department of Commerce.

TABLE C (37)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	** 14	16	28,950
Secondary	5	5	8,315
No Treatment	10	XXXX	32,585

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes three municipalities with multiple outlets which are each reported in two classifications.

TABLE D(37)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities **	Undetermined Facilities
Food & Kindred Products	1	0	0	1
Textile Mill Products	6	0	3	3
Chemical & Allied Products	4	0	0	4
Rubber Products	1	0	0	1

* Industries having separate outlets and discharging wastes directly to watercourse.

** Information for the three plants in Alabama furnished by the Alabama Water Improvement Advisory Commission.

TABLE E (37)

ADEQUACY OF EXISTING TREATMENT FACILITIES *

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	21	4	12	5	12	4	5
Industrial	0	-	-	-	-	-	-

* No report for Georgia portion of sub-basin.

TABLE $F_{(37)}$

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	1	3,000	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G(37)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements *	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	11	26,675	3
Enlargement or Additions to Existing Plant	10	24,475	0
Replace Existing Plant	1	3,000	0
No Project Required	4	5,610	0
Undetermined	5	10,090	9

* No report for Georgia portion of sub-basin.

TABLE H (37)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	22	2
Abatement Ordered	0	0
Plans under Preparation	1	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	1
Status Undetermined*	4	9

* No report for Georgia portion of sub-basin.

TABLE I(37)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION*

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama			
Municipal			
Alexander City	14,000	Addition to plant	
Ashland	700	Additions to two plants	
Auburn	15,300	Two new plants	
Camp Hill	650	New Plant	
Dadeville	1,000	New Plant	
East Tallassee	150	Additions to plant	
LaFayette	300	Additions to plant	
Avondale Mill Village	250	New Plant	
Martin Dam	75	Additions to plant	
Pepperell Mill Village	1,250	Additions to plant	Planning Connection to Opelika's New Plant
Prison #4	360	Undetermined	
Roanoke	3,300	Two new plants	
Tallassee	2,850	New Plant	
Tallassee Mill Village	1,825	New Plant	
Tuskegee Inst.	5,000	Additions to two plants	
Tuskegee	1,500	Two new plants	

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Name	Population Served	Project Requirements	Remarks
Alabama			
Municipal			
Union Springs	3,000	Replace Plant	
Veteran's Hospital	3,000	Enlarge Plant	
Industrial			
Two textile mill products	10,000	Two new plants	
Pepperell Textile Mill	28,000	New Plant	Plant under construction

* No report for Georgia portion of sub-basin.

SUB-BASIN 38

COOSA RIVER BASIN

GENERAL DESCRIPTION

The Coosa River Basin is bounded on the north by the Tennessee River Basin, on the east by the Chattahoochee and Tallapoosa River Basins, on the south by the Alabama River Basin and on the west by the Cahaba and Warrior River Basins. The basin comprises an area of 10,286 square miles, of which 5,407 are in Alabama, 4,779 are in Georgia and 100 in Tennessee.

The Coosa River is formed by the confluence of the Oostanaula and Etowah Rivers at Rome, Georgia. The River flows approximately 286 miles to its junction with the Tallapoosa River, some fifteen miles above Montgomery, Alabama where these rivers form the Alabama River.

The Etowah and Oostanaula Rivers rise within the Blue Ridge Mountain Province of northwest Georgia and southeastern Tennessee and flow through low hills with elevations of less than 1250 feet. There are, however, areas where the elevations exceed 3,000 feet. A small section of the basin drained by Little River, which enters the Coosa below Rome, Georgia, lies in the Appalachian Plateau Province. In its course, the Coosa traverses an extensive area of the Appalachian Valley and Ridge Province, a small belt of the Piedmont Province, and continues into the Coastal Plain. The basin thus includes portions of five major physiographic provinces. In general, river slopes are relatively steep.

Mean annual rainfall varies from about forty-eight inches in the north-central part of the basin to fifty-five inches in the central part of the basin and to fifty-two inches in the southern end of the basin. A twenty-three year average at the U.S. Geological Survey gauge located at the Alabama Power Company's Jordan Dam, having a drainage area of 10,200 square miles shows the average discharge to be 15,890 cubic feet per second. A maximum flow recorded at this point was 298,000 cubic feet per second, and the minimum flow recorded was 54 cubic feet per second.

The Coosa Basin has a warm moist climate with relatively mild winters and long hot summers. The mean annual temperature varies from about sixty degrees in the north to sixty-five degrees in the south. The frost free season varies from 193 days in the northern valleys to 242 days in the southern part of the area. Droughts are uncommon during the growing season and rainfall is adequate for the needs of agriculture.

The basin population according to the 1940 census was approximately 589,481, of which thirty percent was urban. The preliminary 1950 census indicates the basin population to be 662,431.

ECONOMIC DEVELOPMENT

The 1950 preliminary census report showed the basin urban population to be 228,765, or approximately thirty-five percent of the total and to be distributed among twelve communities in Alabama and ten in Georgia. The urban municipalities in Alabama account for sixty-three percent of the total urban population.

Resources of the basin consist of adequate surface water supply, limited deposits of iron, coal, and limestone, and other minerals, extensive acres of forest land, and highly erosive soils of mediocre quality.

The Coosa Basin is both an agricultural and industrial area. The major agricultural products are cotton, corn, truck crops, cattle, and dairy products and timber. Major industrial activities include the production of textiles and apparel, steel products, paper products, rubber products, cast iron pipe, chemicals and tractor assembly works.

USE OF WATER RESOURCES

There are sixty-six public and numerous industrial water supplies in the Coosa River Basin. Twenty-one communities with a total population of 144,255, obtain water from the Coosa River or its tributaries.

A number of headwater streams which arise in the mountains have been stocked with several types of trout and provide a certain amount of sports fishing. Reservoirs in the basin, in general, possess good recreational potentialities. Existing reservoirs, except for the recently completed Allatoona, are private developments whose shores are almost completely in private ownership and are not available for public recreational use. Some commercial fishing has been carried on in the Coosa River.

Hydroelectric development in the basin is quite extensive. On the Coosa River the Lay and Mitchell Dams in Chilton County, Alabama, impounds 6,700 acres and 5,800 acres of water respectively and Jordan Dam above Wetumpka, Alabama impounds 4,900 acres. Allatoona Dam on the Etowah River near Cartersville, Georgia, forms a reservoir of 15,700 acres. A fifth dam is proposed for construction on the Coosa River at Howell Mill Shoals in northeastern Alabama. No water commerce has been reported on the Coosa River since 1940.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Table A through I, inclusive.

There are thirty-one municipal sources of pollution in Alabama, whose collecting systems serve a population of 135,645, and discharge pollution with a population equivalent of 104,695. Data concerning the amount of pollution discharged by twenty communities in Georgia having a population of 48,190 has not been furnished this office by the State Water Pollution Control Agency.

Ten industries in Alabama producing organic wastes discharge pollution with a population equivalent of 55,125 directly to a watercourse. The types of waste and amount of pollution discharged by the thirty-three industries located in the Georgia portion of the basin, which may or may not have separate outlets, have not been supplied this office by the Georgia Water Pollution Control Agency.

Twenty-two municipalities have twenty-five primary sewage treatment plants serving a population of 22,670. Fourteen secondary treatment plants at twelve municipalities serve a population of 50,675. No treatment facilities are provided for 110,490 persons at nineteen municipalities.

Information furnished by the Alabama Water Improvement Advisory Commission regarding existing treatment facilities for the ten industrial establishments in Alabama indicates no treatment of their wastes. Industrial waste treatment facilities for thirty-three industrial plants in Georgia has not been reported to this office by the Georgia State Water

Pollution Control Agency.

No report as to the adequacy with relation to capacity or operation for the eighteen municipal sewage treatment plants in Georgia has been furnished this office. In Alabama eleven plants are adequate with relation to capacity and ten are considered inadequate. Nineteen plants in Alabama are operated satisfactorily and two are in need of improved operation.

Two new domestic sewage treatment plants were placed in operation during 1947 serving a total population of 7,250. No industrial waste treatment plants are reported as being placed in operation during the period 1946 through 1949.

Requirements to abate pollution existing in the basin are ten new municipal sewerage treatment plants serving a population of 85,870, nine new industrial waste treatment plants, additions at eleven municipal treatment plants serving 11,700 persons and replacement of one existing plant serving a population of 1,200. These required projects are in the State of Alabama. Requirements for industrial waste and domestic sewage treatment in Georgia are not given as the Georgia Water Pollution Control Agency has not submitted this information.

The status of treatment works projects to abate pollution in Georgia has not been furnished for use in this report by the State Water Pollution Control Agency. Alabama reports plans are under preparation at one municipality for an addition to a plant serving 1,150. No formal action has been taken with the remaining municipalities and industries discharging wastes to the streams of the basin and which require treatment works projects.

TABLE A(38)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	31	135,645	104,695
Having population data available (Data on pollution load to watercourse incomplete or not available)	20	48,190	Not applicable
TOTAL	** 53	183,835	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes 2 mill villages for which no population data are available.

TABLE B(38)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	10	55,125
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	*33	Undetermined
TOTAL	43	xxx xxx

* Industries (only those types normally considered to discharge wastes with polluting characteristics) located in the Georgia portion of the sub-basin, which may or may not have separate outlets. Information obtained from "Manufactures of Georgia" prepared by the Georgia Agricultural and Industrial Development Board and supplemented by information from the Georgia State Department of Commerce.

TABLE C (38)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	** 22	25	22,670
Secondary	12	14	50,675
No Treatment	19	XXXX	110,490

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes two mill villages for which no population data are available.

TABLE D(38)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities **	Undetermined Facilities
Food & Kindred Products	9	0	0	9
Textile Mill Products	16	0	9	7
Chemical & Allied Products	16	0	0	16
Primary Metals Industry	1	0	1	0
Miscellaneous	1	0	0	1

* Industries having separate outlets and discharging wastes directly to watercourse.

** Information for the ten plants in Alabama portion of sub-basin furnished by the Alabama Water Improvement Advisory Commission.

TABLE E (38)

ADEQUACY OF EXISTING TREATMENT FACILITIES *

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	39	11	10	18	19	2	18
Industrial	0	-	-	-	-	-	-

* No report for Georgia portion of sub-basin.

TABLE $F_{(38)}$

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	2	7,250	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G(38)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements*	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	10	85,870	9
Enlargement or Additions to Existing Plant	**11	11,700	0
Replace Existing Plant	1	1,200	0
No Project Required	10	24,775	0
Undetermined	26	60,290	34

* No report for Georgia portion of sub-basin.

** Includes three plants for one municipality.

TABLE H (38)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	21	9
Abatement Ordered	0	0
Plans under Preparation	1	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined *	26	34

* No report for Georgia portion of sub-basin.

TABLE I(38)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION*

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Anniston-Oxford, Ala.	33,200	New Plant	
Ashville, Ala.	250	Additions to Plant	
Attalla, Ala.	5,000	New Plant	
Avondale (Pell City), Ala.	1,200	Replace Existing Plant	
Bemiston, Ala.	1,100	Additions to Plant	
Bon Air, Ala.	400	Undetermined	
Calera, Ala.	750	Additions to Plant	
Center, Ala.	750	New Plant	
Clanton, Ala.	3,000	New Plant	
Columbiana, Ala.	1,150	Additions to Plant	Plans under Preparation
Ft. McClellan, Ala.	500	New Plant	
Gadsden, Ala.	40,000	New Plant	
Goodwater, Ala.	650	New Plant	
Jacksonville, Ala.	1,600	Additions to Plant	
Jordan Dam, Ala.	70	New Plant	
Pell City, Ala.	800	Additions to Plant	
Piedmont, Ala.	4,500	Additions to 3 plants	
Springville, Ala.	350	Additions to Plant	
Sycamore, Ala.	1,200	Additions to Plant	

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Name	Population Served	Project Requirements	Remarks
Tutwiler Prison, Ala.	350	New Plant	
Wetumpka, Ala.	2,350	New Plant	
Eight textile mill products	20,125	Eight New Plants	
One primary metal industries	35,000	New Plant	

* No report for Georgia portion of sub-basin.

SUB-BASIN 39

CAHABA RIVER BASIN

GENERAL DESCRIPTION

The Cahaba River Basin is bounded on the north and west by the Warrior River Basin, on the east by the Coosa River Basin, and on the south by the Alabama River Basin. The long axis of the basin extends southerly from a point about 24 miles northeast of Birmingham, Alabama. The drainage area of the Cahaba River is approximately 1,870 square miles and lies wholly within the State of Alabama. The river flows 108 miles in a southwesterly direction to the fall line near Centerville where it drops to the coastal plain. It then flows in a southerly direction for 87 miles to its junction with the Alabama River seventeen miles below Selma. Headwaters of the river are in low hills which attain elevations of over 1,500 feet. The slope of the river decreases from 7.7 feet per mile in the upper reaches to 1.5 feet per mile at its mouth.

The basin has a warm moist climate with mild winters and long hot summers. The average annual rainfall at Centerville is about 56 inches. Twenty year average discharge at the Centerville U.S. Geological Survey gauge is 1,634 cubic feet per second. The maximum discharge during this period was 82,800 cubic feet per second and the river has reached a low flow of 90 cubic feet per second. The mean annual temperature at this point is 64 degrees. The frost free season varies from 210 to 230 days per year.

The total estimated population of the basin in 1940 was 93,448 and the preliminary 1950 census indicates a total population of 112,091.

ECONOMIC DEVELOPMENT

The estimated 1950 urban population of 18,542 is distributed between Homewood and Leeds. There are ten incorporated non-urban communities whose population is included in the 1950 estimate of 93,549 rural persons.

The principal resources of the basin are fertile soils in the lower part and coal and timber in the upper part of the basin. The Cahaba River Valley has been developed both as an agricultural and industrial area. The major agricultural products are corn, cotton, cattle, and dairy produce. The portion of the basin below Centerville which is in the upper Coastal Plain and Black Belt is the major agricultural area. The most important industries are coal mining and lumbering together with their associated activities.

Public water supply is one of the important uses of the water resources of the Cahaba Basin. Only five of the twenty-six public water supplies in the area are from surface water, but these five serve approximately ninety-five percent of the 428,550 persons using either surface or ground public supplies. Included in the public water supplies is the Birmingham Water

Works Cahaba Plant which serves approximately 400,000 residents of metropolitan Birmingham, located in the Warrior River Basin. The major portion of the Birmingham water does not return to the Cahaba River but is diverted to the Warrior River Basin. Much of the industrial activity at Birmingham receives water from the municipal supply. Livestock watering is an important use in the lower part of the basin.

Fishing and boating on Lake Purdy, an impoundment for the Birmingham water supply and the only impoundment of any significance in the sub-basin, and fishing, swimming, and boating in Oak Mountain State Park are the only major recreational activities in the area.

There is no commercial fishing of consequence in the basin and no dams for power development, flood control or navigation exist on the river.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Tables A to I inclusive.

There are eight sources of municipal pollution contributed to by a population of 25,300 people. The amount of pollution discharged to the water courses in terms of equivalent number of people is reduced to 15,700 by treatment. No industries discharging damaging wastes directly to a watercourse are reported in the basin. Coal mine drainage in the upper portion of the basin has no apparent serious effect on the quality of the water.

Five of the eight municipal sources of pollution have treatment facilities consisting of four primary treatment plants at three municipalities and secondary treatment plants at two municipalities. Primary treatment serves 19,300 persons and secondary treatment is given to the sewage collected from 3,300 people. Of the six existing treatment plants two are reported adequate with relation to capacity and four are inadequate. Operation of the six treatment plants is considered to be satisfactory.

Requirements for municipal waste treatment plants are four new plants to serve 2,700 persons and four enlargements or additions to existing plants to serve 19,300 people. Two of the new plants are required at one municipality. No new municipal treatment plants have been constructed during the period 1946 through 1949. No formal action has been taken with the municipalities requiring projects to abate pollution but plans are being prepared for an addition to the Jefferson County, Alabama, Shades Valley Plant serving approximately 17,000 persons in the Birmingham area.

TABLE A (39)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	8	25,300	15,700
Having population data available (Data on pollution load to watercourse incomplete or not available)	0	-	Not applicable
TOTAL	8	25,300	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B(39)

SOURCES OF POLLUTION

INDUSTRIAL*

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	0	-
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	0	xxx xxx

* No industries discharging wastes directly to a watercourse are reported.

TABLE C (39)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	3	4	19,300
Secondary	2	2	3,300
No Treatment	3	XXXX	2,700

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE $D_{(39)}$

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
(**)	-	-	-	-

* Industries having separate outlets and discharing wastes directly to watercourse.

** No industries discharging wastes directly to a watercourse are reported.

TABLE E (39)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	6	2	4	-	6	-	-
Industrial	0	-	-	-	-	-	-

TABLE F(39)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial *	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	0	-	0	-

* No industries discharging wastes directly to a watercourse are reported.

TABLE G (39)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	4	2,700	0
Enlargement or Additions to Existing Plant	4	19,300	0
Replace Existing Plant	0	-	0
No Project Required	0	-	0
Undetermined	0	-	0

* No industries discharging wastes directly to a watercourse are reported.

TABLE H(39)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial *
No Formal Action	7	0
Abatement Ordered	0	0
Plans under Preparation	1	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	0	0

* No industries discharging wastes directly to a watercourse are reported.

TABLE I(39)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Irondale, Ala.	1,300	Addition to Plant	
Jefferson County, Ala. Shades Valley Plant	17,000	Addition to Plant	Plans under Preparation
Marion, Ala. (1)	500	New Plant	
Marion, Ala. (2)	350	New Plant	
Montevallo, Ala.	1,000	New Plant	
Alabama College	850	New Plant	
Siluria, Ala.	500	Addition to Plant	
Textile Mill Village	500	Addition to Plant	

SUB-BASIN 40

ALABAMA RIVER BASIN

GENERAL DESCRIPTION

The Alabama River is formed by the confluence of the Coosa and Tallapoosa Rivers, fifteen miles above Montgomery, Alabama. The basin is bounded on the north by the Tallapoosa, Coosa and Cahaba River Basins, their rivers being the major tributaries of the Alabama River; on the east and south by the Perdido-Escambia River Basin and on the west by the Lower Tombigbee River Basin. The river ends at its junction with the Tombigbee to form the Mobile and Tensaw Rivers some forty-five miles above Mobile. The total length of the Alabama River is approximately 320 miles and the basin comprises about 5,775 square miles wholly within the State of Alabama. The drainage area of the Alabama, Coosa, Tallapoosa, and Cahaba Rivers is 22,700 square miles.

The drainage basin consists of broad valleys and low hills, few of which attain an elevation of more than 500 feet. The slope of the river for the first hundred miles from its source is approximately 0.5 feet per mile, below which point it gradually decreases to its confluence with the Tombigbee where the effect of the two foot tide of Mobile Bay is noticeable at low stages.

The factors controlling the climate of the basin; namely, geographic position, elevation, arrangement of highlands and proximity to the Gulf of Mexico tend generally toward a temperate and equable climate. The annual mean temperature ranges between sixty-five degrees in the north and sixty-six degrees in the south. The growing season varies from 242 days in the north to 246 days in the south. The annual mean rainfall varies from fifty-one inches at Montgomery to sixty-two inches in the southern part of the basin. The Alabama ranks thirteenth among the large rivers of the United States in order of the average discharge at the mouth. A seventeen year record at Claiborne shows the average daily flow to be 32,320 cubic feet per second, and a maximum flow of 227,000 cubic feet per second has been recorded. The flow is regulated by power projects on both the Tallapoosa and Coosa Rivers and a minimum of 6,000 cubic feet per second is maintained in the river at Montgomery.

The 1940 population in the basin was 280,528. Preliminary 1950 census figures indicate a population increase to 290,303.

ECONOMIC DEVELOPMENT

The 1940 urban population was 100,582 distributed between Montgomery, Prattville, and Selma. Preliminary figures of the 1950 census indicate that this urban population has increased to 137,890. The rural population of 152,413 includes twelve incorporated communities within the basin.

The principal natural resources of the Alabama Basin consist of its fertile valleys, large timber resources, and mineral resources of the Coastal Plain. These have led to its chief economic development of farming and lumbering with industrial development in Montgomery, Selma, and Prattville.

The Alabama Basin has developed from an agricultural area into one of combined agricultural and industrial economy. The agriculture of the basin has changed radically since 1930. Row crop farming has given way to pasture land and the development of the cattle and dairying industry. This is particularly true of the rich Black Belt or prairie soils area of Montgomery, Lowndes, Wilcox, Dallas, and Perry counties where green grazing is possible throughout the year. The livestock terminal market at Montgomery is now the largest east of the Mississippi River and south of the Ohio River. Other major agricultural products are cotton and corn.

South of the Black Belt lie the Coastal Plain and River Flood Plain soils which are well drained and easily tilled. A variety of crops are profitably grown here including cotton, some wheat, oats, sorghum, soy beans, peanuts, pecans, sweet potatoes, and truck crops. Approximately sixty-three percent of the total area of the basin is in farm lands.

The principal type of industry in eleven of the sixteen counties in the area is lumbering, forestry, and manufacture of wood products. The industry of the basin is so diversified, however, that these account for only one-fourth of the total labor force. Important industries of the urban centers include meat packing, milk processing, textiles and chemicals.

USE OF WATER RESOURCES

The twelve public water supplies in the basin are all obtained from underground sources. Although the Alabama River Valley is richly supplied with an abundance of ground water, there is some possibility of deficiencies at Montgomery and Selma due to rapidly developing industrial areas. The twelve public ground water supplies are used by a total of 159,305 persons.

Livestock watering on tributaries of the Alabama River is a major water use in the agricultural area of the basin.

The river and its tributaries have not been developed extensively as recreational areas. The limited amount of recreational activities in the area consists of boating and fishing, together with swimming in the tributary streams near centers of population. Commercial fishing is carried on rather extensively throughout the entire length of the river.

Water transportation on the Alabama is of significance although less so than in former years. A four foot channel at low water is maintained to Selma, and a three and one-half foot channel to Montgomery. In 1947 a total of 67,064 tons of freight was transported on the river.

A plan for the development of the river for navigation and production of power is under consideration. This plan includes the construction of dams at Clayborne, Millers Ferry, and Jones Bluff.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Tables A to I, inclusive.

Eleven municipalities with a sewered population of 122,275 discharge domestic sewage to the streams of the basin. The total pollution discharged to watercourses, in terms of equivalent number of people, by these communities is 130,075 due to industrial establishments connected to municipal sewers.

Four industries producing organic wastes amounting to 15,100 population equivalent, discharge directly to watercourses. No treatment facilities exist at these industrial establishments.

Four municipalities have a total of five primary treatment plants serving a population of 2,925. Only one of the five municipal waste treatment plants is considered adequate with relation to design capacity, but all five are satisfactorily operated. No plants were constructed and put into operation during the period of 1946 through 1949.

Nine new plants serving a population of 119,650 are required to abate pollution in the basin. Two of these plants will serve one municipality. One municipality with a population of 1,500 requires enlargement of two of its existing plants. No project is required at two municipal sources of pollution having a total connected population of 1,125.

Three new waste treatment plants are required to serve three industries producing food and kindred products. No project is required at the fourth industry in the basin discharging wastes directly to a watercourse.

No formal action has been taken for construction of municipal or industrial waste treatment palnts required to abate pollution.

TABLE A(40)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	11	122,275	130,075
Having population data available (Data on pollution load to watercourse incomplete or not available)	0	-	Not Applicable
TOTAL	11	122,275	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (40)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharge to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	4	15,100
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	0	xxx xxx

TABLE C(40)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Number Plants	Population Served
Primary	4	5	2,925
Secondary	0	-	-
No Treatment	7	XXXX	119,350

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D(40)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	3	-	3	-
Textile Mill Products	1	-	1	-

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(40)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	5	1	4	0	5	0	0
Industrial	0	-	-	-	-	-	-

TABLE F(40)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G(40)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	9	119,650	3
Enlargement or Additions to Existing Plant	2	1,500	0
Replace Existing Plant	0	-	0
No Project Required	2	1,125	1
Undetermined	0	-	0

TABLE H (40)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number Municipal	Industrial
No Formal Action	9	3
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	0	0

TABLE I(40)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Camden, Ala.	300	New Plant	
Craig Field	1,700	New Plant	
Kilby Prison & Gunter Field	8,500	New Plant	
Marion, Ala.	1,150	New Plant	
Maxwell Field	5,000	New Plant	
Monroeville, Ala. (#1)	800	Enlarge existing plant	
Monroeville, Ala. (#2)	700	Enlarge existing plant	
Montgomery, Ala. (#1)	32,000	New Plant	
Montgomery, Ala. (#2)	55,000	New Plant	
Prattville, Ala.	3,000	New Plant	
Selma, Ala.	13,000	New Plant	
Food & Kindred Products	14,750	Three new plants	

SUB-BASIN 41

UPPER TOMBIGBEE RIVER BASIN

GENERAL DESCRIPTION

The Upper Tombigbee River Basin is bounded on the north by the Tennessee River Basin, on the south by the Lower Tombigbee and Pearl River Basins, on the east by the Warrior River Basin, and on the west by the Mississippi River Basin. The river is formed in northeastern Mississippi by the convergence of a series of small creeks. It flows southeastward approximately 120 miles to the Mississippi-Alabama State line, and continues in Alabama for another 120 miles to its confluence with the Warrior River where it becomes the Lower Tombigbee. The major tributaries are the Nuxubee River which rises in Mississippi and the Sipsey River which rises in Alabama.

The total drainage area is about 9,633 square miles of which 5,869 are in northeastern Mississippi and 3,764 are in northwestern Alabama.

The northern part of the basin is bounded by steep hills and valleys. The central and southern part of the basin is flat prairie land. The profile is very flat, aside from the extreme upper reaches of the streams and runs for the most part through the upper coastal plains.

Average annual rainfall is about fifty-three inches, but distribution is not uniform throughout the year. There are long periods of dry weather and, likewise, extended periods of rain. A thirty year record of the U.S. Geological Survey gauge at Columbus, Mississippi, where the drainage area is 4,490 square miles, shows the average discharge to be 5,791 cubic feet per second. The maximum discharge at this point was 134,000 cubic feet per second and the minimum discharge recorded was 160 cubic feet per second. Records of the gauge at Gainesville, Alabama, where the drainage area is 8,700 square miles, shows a minimum of 389 cubic feet per second for a nine year period.

The mean annual temperature for this area varies from about sixty-two to sixty-five degrees. The average number of frost free days ranges from 200 in the northern portion of the basin to 230 in the south.

The total population of the basin based upon the 1940 census was approximately 388,003. The preliminary 1950 census reports indicate a population of 376,319, a three percent decrease from the 1940 population.

ECONOMIC DEVELOPMENT

The basin contains eight urban communities which comprise seventeen percent of the population. Six of these communities are in Mississippi and two are in Alabama. A total of some forty-two incorporated towns are in the basin equally divided between the two states.

Agriculture is the chief occupation of the area. Cotton, corn, dairy products, and livestock are the chief products.

The major industries of the basin are lumbering, together with its associated activities, and textile manufacturing, including apparel and other fabric products.

USE OF WATER RESOURCES

There are thirty-four public water supplies in the basin. Aside from Columbus, Mississippi and Fayette, Alabama, all public water supplies in the basin are taken from deep wells.

Recreational areas have not been developed on the streams but fishing, swimming, boating, and hunting of migratory water fowl are engaged in on the streams near the larger communities. There is some commercial fishing on the main river.

The Congress has passed a bill authorizing a project to connect the Tombigbee River with the Tennessee River. A small amount of the estimated cost has been appropriated, and planning has been started.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities, and treatment plant requirements are shown in Tables A through D, inclusive.

Eleven municipalities with a total sewered population of 9,175 discharge pollution to watercourses of the basin. Treatment at several municipalities reduces this to a population equivalent of 7,705. The amount of pollution discharged to streams by fourteen municipalities serving 60,700 has not been determined.

Eleven industries discharge waste directly to streams, two of which produce waste of an undetermined type and nine produce organic waste of an undetermined amount.

Thirteen of the twenty-five municipalities have primary treatment plants. One of these municipalities has two primary plants. Population served by the fourteen primary treatment plants is 17,150. One municipal secondary treatment plant serves a population of 1,200. Eleven municipalities with a total population of 51,525 have no treatment, and no treatment is provided at any of the eleven industrial plants.

The design capacity of two of the municipal treatment plants is satisfactory, the remaining thirteen are considered to be inadequate with relation to capacity. Operation at thirteen of the treatment plants is satisfactory and unsatisfactory at the other two.

There have been no municipal or industrial waste treatment plants constructed during the period 1946 through 1949. Requirements for industrial waste treatment plants are undetermined. Construction of fifteen new sewage treatment plants to serve a population of 34,075 and enlargement or additions at six municipal plants serving a population of 8,500 is necessary in order to abate pollution in the basin. No projects are required at six municipalities having a total population of 27,300.

Plans are under preparation at three municipalities for construction of treatment plants. Final plans have been approved for two treatment works projects. The construction of one of these plants is awaiting financing. No formal action has been taken with the other municipalities or industries for the construction of adequate waste treatment works to abate pollution.

TABLE A (41)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	11	9,175	7,705
Having population data available (Data on pollution load to watercourse incomplete or not available)	14	60,700	Not Applicable
TOTAL	25	69,875	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B(41)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	0	-
Producing Organic Wastes	9	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	2	Undetermined
TOTAL	11	xxx xxx

TABLE C(41)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	13	14	17,150
Secondary	1	1	1,200
No Treatment	11	XXXX	51,525

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D(41)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	9	0	9	0
Chemical and Allied Products	1	0	1	0
Lumber and Wood Products	1	0	1	0

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E (41)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	15	2	13	0	13	2	0
Industrial	0	-	-	-	-	-	-

TABLE F(41)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G (41)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	* 15	34,075	0
Enlargement or Additions to Existing Plant	** 6	8,500	0
Replace Existing Plant	0	-	0
No Project Required	6	27,300	0
Undetermined	0	-	11

* Includes two new plants for one municipality.

** Includes one municipality that needs additions to both of its existing plants.

TABLE H (41)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number Municipal	Industrial
No Formal Action	16	11
Abatement Ordered	0	0
Plans under Preparation	3	0
Final Plans Approved	1	0
Construction Awaiting Financing	1	0
Under Construction	0	0
Status Undetermined	0	0

TABLE I(41)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama Municipalities			
Aliceville	1,700	Two New Plants	
Carrollton	550	New Plant	
Fayette	1,600	New Plant	
Guin	700	New Plant	
Haleyville	200	Addition to Plant	Plans under Preparation
Hamilton	650	Addition to Plant	
Sulligent	825	New Plant	
Vernon	425	Addition to Plant	
Winfield	1,225	Additions to Two Plants	
Industries			
None			
Mississippi Municipalities			
Amory	3,500	New Plant	
Booneville	1,500	New Plant	Plans under Preparation
Fulton	1,000	New Plant	
Houston	1,500	New Plant	

TABLE I(41)

Name	Population Served	Project Requirements	Remarks
Mississippi Municipalities			
Macon	2,000	New Plant	
Okolona	2,000	New Plant	
Starkville	4,000	New Plant	Final Plans Approved
State College	3,200	New Plant	
Tupelo	10,000	New Plant	Contract Awaiting Financing
West Point	6,000	Enlarge Plant	Plans under Preparation
Industries			
Food & Kindred Products	Not Known	Nine Undetermined	
Chemical and Allied Products	Not Known	One Undetermined	
Lumber and Wood Products	Not Known	One Undetermined	

SUB-BASIN 42

WARRIOR RIVER BASIN

GENERAL DESCRIPTION

The Warrior River Basin is bounded on the north by the Tennessee River Basin, on the east by the Coosa and Cahaba River Basins, on the west by the Upper Tombigbee Basin and on the south by the Lower Tombigbee River Basin. The main stem of the river is formed by the confluence of Mulberry Fork and Locust Fork, both of which arise in the mountainous area of north central Alabama. The Warrior River flows in a southwesterly direction some 175 miles to its junction with the Tombigbee River at Demopolis, Alabama, The Warrior Basin, including the drainage areas of its source tributaries, comprises approximately 6,245 square miles entirely within the State of Alabama.

The drainage basin is hilly with highest elevations reached in the northern portion. The topography is such as to normally result in flashy stream conditions, but in the vicinity of Birmingham and below, the main stem is canalized by a series of dams and locks and therefore normal stream flow conditions are modified.

There are several impoundments in the basin, consisting of Birmingham's industrial water supply on Blackburn Creek, Tennessee Coal and Iron Reservoir on Village Creek, Bankhead Lake on the Black Warrior River and the pools formed by eleven navigation dams.

The mean annual rainfall is about fifty-four inches. A fifteen year record at the U.S. Geological Survey gauge at Eutaw, Alabama gives the average discharge as 8,866 cubic feet per second. The maximum flood recorded was 134,000 cubic feet per second and a minimum flow of 177 cubic feet per second has been recorded.

The climate of the sub-basin may be described as warm and moist with mild winters and long hot summers. Mean annual rainfall is fifty-four to fifty-five inches. The frost free season varies from 210 days in the northern zone to 240 days near the junction with the Tombigbee River.

The total population of the Warrior Basin in 1940 was 706,819. The preliminary 1950 census reports indicate a population of 795,104.

ECONOMIC DEVELOPMENT

There are thirty-seven incorporated communities in the basin. The estimated 1950 urban population of the area is 436,526 and is distributed among fourteen communities, an increase of five urban municipalities since 1940. The preliminary 1950 census indicates the urban population is 55% of the total basin population. The metropolitan Birmingham area has the major portion of this urban population.

The principal natural resources of the Warrior Basin are coal, iron, and fertile soils in the southern portion of the basin.

The Warrior River Basin is the most highly industrialized basin in Alabama and ranks high among those of the Southeast. Coal and iron mining, steel production, processing of steel products, chemical by-products associated with the production of pig-iron, chemicals, textiles, paper-making, oil refining, and wood preserving comprise the major industries. It is estimated that 90% of the coal and iron produced in Alabama comes from this basin.

The more productive agricultural areas of the basin are located in Cullman, Blount, southern Tuscaloosa, Greene, and Hale Counties. Cotton, corn, and truck crops are major agricultural products in the first three counties, while dairying and beef cattle production are the major agricultural interest in Green and Hale Counties, which are partly in the Black Belt soils area. Cullman County is also a large producer of strawberries.

USES OF WATER RESOURCES

Locust and Mulberry Forks of the Warrior River serve as a source of raw water for eleven communities, the largest being Jasper, a city of 8,558 persons. Located on Blackburn Fork near Inland is a 1,500 acre reservoir which serves as a source of industrial water for metropolitan Birmingham and as a source of raw water for the filtration plant of the Birmingham Water Works Company located near Tarrant City. Another major source of raw water for the City of Birmingham is from the Cahaba River just east of the Warrior River Basin. A large percentage of the water from the Cahaba River is discharged as sewage to the Warrior Basin.

Numerous private cottages and commercial fishing camps are located on Bankhead Lake and Locust Fork in Jefferson County. In view of the present pollution load, particularly below the streams which have their sources in the Birmingham area, recreation is limited to boating, and to a lesser extent, fishing. Prior to the industrialization of the Tuscaloosa area on the Warrior, boating, fishing, and swimming were major sports activities there. The lower reaches of the Warrior have not been developed as recreational areas. There is some commercial fishing in the Warrior and the larger tributaries near the centers of population are used for swimming and fishing.

The Warrior River is canalized from its mouth to Sayre on Locust Fork and to Sipsey on Mulberry Fork. An adequate navigation channel has been made possible by eleven navigation locks and dams. The entire flow of the river, particularly during the summer and fall months, is rigidly regulated for navigation.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A through I, inclusive.

There are twenty-seven sewered municipalities in the basin having a connected population of 386,725. Eleven of these discahrge untreated sewage into the streams, while three have secondary and twelve use primary treatment facilities. One additional municipality employs primary treatment for part of its sewage, the remainder is untreated. Approximately one-half of the total connected population in the basin receives treatment at seventeen plants. Of the untreated sewage discharged into the various streams of the basin, ninety-five percent is from the Jefferson County Sanitary District and the City of Tuscaloosa. The industrial waste load discharged to municipal sewers is estimated to have a population equivalent of 42,890, of which thirty percent is discharged into systems where the combined waste is discharged untreated. The total domestic and industrial pollution load of the various municipal systems is estimated to be 429,615. Treatment in the seventeen municipal sewage treatment plants reduces the total pollution load to a population equivalent of 339,150.

There are nine industries in the basin discharging wastes directly to watercourses. Eight of these industries producing organic wastes discharge pollution with a population equivalent of 251,825. One industry produces inorganic wastes only and five of the organic waste producing industries also produce some inorganic wastes.

The deleterious effect of pollution, from metropolitan Birmingham and surrounding area on Locust Fork of the Warrior from the mouth of Five-Mile Creek to the mouth of Locust Fork and thence down the Warrior River to Lock and Dam number seventeen is evident, and confirmed by laboratory analysis. Another major critical area of the Warrior River with respect to pollution is that stretch of the backwater from the lock and dam at Tuscaloosa that extends upstream to the discharge of the first chemical plant located near Holt. This pollution is a combination of industrial waste and domestic sewage.

Of the seventeen municipal sewage treatment plants, only four are considered to be satisfactory with relation to capacity. All seventeen of the treatment plants are satisfactorily operated.

One new plant was placed in operation in 1947 to serve a population of 5,000. Another plant to serve 640 persons was placed in operation in 1948.

Requirements to abate pollution in the area are seventeen new plants to serve a population of 196,975, and enlargement or additions to eight existing plants to serve a population of 179,450. No projects are required at four municipalities, having a population of 10,300. New plants for treatment of waste are needed at seven industrial establishments and treatment requirements at two industrial plants are undetermined.

Plans are under preparation at four municipalities for construction of treatment plants and one plant is presently under construction. No formal action has been taken with other municipal or industrial polluters.

TABLE A (42)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	27	386,725	339,150
Having population data available (Data on pollution load to watercourse incomplete or not available)	0	-	Not Applicable
TOTAL	27	386,725	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B(42)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Dischar to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	8	251,825
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	*6	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	**9	xxx xxx

* Includes five plants also producing organic wastes.

** Total adjusted to correct for duplication noted in footnote marked thus, *.

TABLE C(42)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	13	14	184,650
Secondary	3	3	10,350
No Treatment	**12	XXXX	191,725

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** One municipality also included in primary treatment.

TABLE D(42)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	1	-	1	-
Textile Mill Products	1	-	1	-
Paper & Allied Products	1	-	1	-
Chemical & Allied Products	1	-	1	-
Products of Petroleum & Coal	5	-	5	-

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(42)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	17	4	12	1	17	-	-
Industrial	0	-	-	-	-	-	-

TABLE F(42)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.no. People)
1946	0	-	0	-
1947	1	5,000	0	-
1948	1	640	0	-
1949	0	-	0	-

TABLE G (42)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number *	Population Served by Facilities	Number
New Plant	17	196,975	7
Enlargement or Additions to Existing Plant	8	179,450	-
Replace Existing Plant	0	-	-
No Project Required	4	10,300	-
Undetermined	0	-	2

* Number includes two municipalities in two requirement classifications.

TABLE H (42)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1,1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	20	7
Abatement Ordered	0	0
Plans under Preparation	4	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	1	0
Status Undetermined	0	2

TABLE I(42)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Albertville, Ala. (Mill Village)	700	Addition to Plant	
Carbon Hill, Ala.	1,100	Addition to Plant	
Cordova, Ala.	600	New Plant	
(Mill Village)	500	New Plant	
Cullman, Ala.	3,500	New Plant	Under Construction
Eutaw, Ala.	800	New Plant	
Gorgas, Ala.	400	New Plant	
Greensboro, Ala.	800	Addition to Plant	
Haleyville, Ala.	550	New Plant	
Holt, Ala. (Mill Village)	350	New Plant	
Jefferson County, Ala. (Ensley Plant)	160,000	Additions to Plant	Plans under Preparation
(Tarrant City Plant)	15,000	Additions to Plant	Plans under Preparation
(Valley Creek Outfall)	145,000	New Plant	Plans under Preparation
Moundville, Ala.	550	Additions to Plant	
Northport, Ala. (#1)	1,700	New Plant	
Northport, Ala. (#2)	300	Additions to Plant	
(State Negro Colony	225	New Plant	
(State Colony for Boys)	200	New Plant	

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Name	Population Served	Project Requirements	Remarks
Parrish	800	New Plant	
Tuscaloosa, Ala. #1	25,000	New Plant	
Tuscaloosa, Ala. #2	12,000	New Plant	
(Bryce Hospital)	3,700	New Plant	
(Mill Village)	1,000	Addition to Plant	
(Partlow School)	500	New Plant	
Uniontown, Ala.	1,150	New Plant	
Food & Kindred Products	750	One Undetermined	
Textile Mill Products	75	One New Plant	
Paper & Allied Products	18,000	One New Plant	
Chemical & Allied Products	Not Known	One Undetermined	
Products of Petroleum and Coal	233,000	Five New Plants	

SUB-BASIN 43

LOWER TOMBIGBEE RIVER BASIN

GENERAL DESCRIPTION

The Lower Tombigbee Basin is bounded on the north by the Warrior River and Upper Tombigbee River Basins, on the east by the Alabama River Basin, on the west by the Pascagoula River Basin, and on the south by the Mobile Bay Basin. The main river is formed by the confluence of the Upper Tombigbee and Warrior Rivers at Demopolis, Alabama. The river flows in a southerly direction for approximately 180 miles to its junction with the Alabama River, forming the Mobile River. The Lower Tombigbee Basin comprises approximately 4,447 square miles, of which 3,917 square miles are in western Alabama and about 530 square miles in eastern Mississippi.

The area is relatively flat with few rolling hills. The slope of the river is quite flat and decreases to its confluence with the Alabama where the effect of the two foot tide of Mobile Bay is noticeable at low stages of the river.

The mean annual rainfall varies from about fifty-five inches at Demopolis, Alabama in the northern part of the basin to sixty-two inches in the south. A nineteen year record at the U.S. Geological Survey gauge located at Leroy, Alabama indicates an average discharge of 26,250 cubic feet per second. The maximum recorded flow at this point was 192,000 cubic feet per second. Minimum flows have not been established but have been estimated at fifty cubic feet per second. The mean annual temperature of the basin is approximately sixty-four degrees, and the average number of frost free days is about 230.

The population of the Lower Tombigbee River Basin was 118,860 based on the 1940 census. The preliminary 1950 census indicates that the population has decreased to 103,158.

ECONOMIC DEVELOPMENT

There are fifteen incorporated communities in the Alabama part of the basin and two additional incorporated towns in Mississippi. Urban population is confined to two municipalities in Alabama having a combined population of 8,048. These urban centers are Demopolis and Jackson, Alabama. The population decrease of the basin has been in the rural areas.

The principal natural resources of the Lower Tombigbee Basin are its timber supply, a limited amount of oil, and fertile soils. The basin is mainly an agricultural area and the major products are cotton, corn, hogs and cattle. The northern counties are partially in the Black BElt soils area, which is especially suitable for cattle production.

The major industry in the area is lumbering, together with its associated activities. Choctaw County, Alabama, contains some thirty-five producing oil wells.

USE OF WATER RESOURCES

With the exception of small protions located in the extreme northern part of the basin, the area is abundantly supplied with both ground and surface water. There are fourteen public water supplies in the basin, eleven of which are obtained from underground sources. Underground sources supply over eighty percent of the total population served by public water supplies. The three public water supplies in Sumter County, Alabama are obtained from surface streams. A large part of the water for livestock purposes is obtained from farm ponds.

Due to its remoteness from centers of population, the river and its streams have not been developed as recreational areas. Some swimming and fishing are carried on in the streams located in the various communities. Commercial fishing is done rather extensively on the main river.

The Lower Tombigbee is used for transportation purposes. A nine foot navigation channel is maintained throughout the length of the river by four low lift locks and dams. This channel makes possible navigation from the Mobile area to the Birmingham industrial region.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A through I, inclusive.

There are nine sources of municipal pollution in the

Lower Tombigbee River Basin, all located in the State of Alabama. The sewered population of these nine communities is 9,310. The amount of pollution discharged to watercourses in terms of equivalent number of people is reduced to 8,650 by treatment at four municipalities with five primary treatment plants. These five plants serves a population of 1,960.

There is one source of industrial pollution producing organic wastes with a population equivalent of 800. This food and kindred products industry has no treatment facility for its waste.

Of the five municipal sewage treatment plants three are inadequate with respect to design capacity and the capacity of two is undetermined. Two of the municipal plants are operated satisfactorily and adequacy of operation at three has not been determined.

No municipal or industrial waste treatment plants have been constructed in the basin during 1946 through 1949.

Five new plants to serve a population of 7,350, four additions to existing plant to serve a population of 1,810, and one replacement of existing plant to serve 150 persons is required to abate the pollution of the basin. Two of the enlargements are for one municipality. The requirements for the one industrial plant in the basin that discharges waste directly to a watercourse are undetermined.

No formal action has been taken with the nine municipalities or one industry contributing waste to watercourses of the Lower Tombigbee River Basin.

TABLE A (43)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	9	9,310	8,650
Having population data available (Data on pollution load to watercourse incomplete or not available)	0	-	Not applicable
TOTAL	9	9,310	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B(43)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	1	800
Producing Organic Wastes	0	Undetermined
Producing Inorganic Wastes	0	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	1	xxx xxx

TABLE C (43)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	4	5	1,960
Secondary	0	-	-
No Treatment	5	XXXX	7,350

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D (43)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	1	0	1	0

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E (43)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	5	0	3	2	2	0	3
Industrial	0	-	-	-	-	-	-

TABLE F(43)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	0	-	0	-

TABLE G(43)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	5	7,350	0
Enlargement or Additions to Existing Plant	* 4	1,810	0
Replace Existing Plant	1	150	0
No Project Required	0	-	0
Undetermined	0	-	1

* One municipality requires additions to two plants.

TABLE H (43)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1,1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	9	1
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	0	0

TABLE I(43)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama			
Municipalities			
Bellamy	150	Replace Existing Plant	
Butler	375	Addition to Plant	
Demopolis	1,650	New Plant	
Grove Hill	600	Addition to Plant	
Jackson	1,700	New Plant	
Linden	835	Addition to Two Plants	
Livingston	1,600	New Plant	
Thomasville	1,300	New Plant	
York	1,100	New Plant	
Industries			
Food & Kindred Products	800	One Undetermined	
Mississippi			
Municipalities			
None			
Industries			
None			

SUB-BASIN 44

MOBILE BAY BASIN

GENERAL DESCRIPTION

The Mobile Bay Basin comprises 1,592 square miles of lowland, coastal and tidal areas. The basin is bounded on the north by the Alabama and Tombigbee River Basins, on the east by the Perdido drainage area, on the west by the Pascagoula River Basin and on the south by the Gulf of Mexico. The main tributary streams of the bay are the Mobile and Tensaw Rivers. These rivers are formed by the junction of the lower Tombigbee and Alabama Rivers approximately forty-five miles above Mobile. The Mobile River ranks eighth among the large rivers of the United States in order of average discharge at the mouth. Other major tributaries draining the Mobile Bay Basin are the Apalachee and Blakeley Rivers. Included also are streams which drain into Bon Secour Bay and the Gulf of Mexico from Gulf Shores to Ft. Morgan and Mississippi Sound.

Ground elevations of the area are low and tidal effect occurs in the tributary streams to the bay and at the source of the Mobile River.

The climate of the area is influenced by proximity to the Gulf of Mexico. The mean annual temperature is approximately sixty-seven degrees and the number of frost free days varies from 250 to 300 days. Mean annual rainfall varies from sixty-two to sixty-six inches.

The population of the basin in 1940 was 153,696, and the preliminary 1950 census indicates the population to be about 224,000.

ECONOMIC DEVELOPMENT

The preliminary 1950 census shows the urban population of the area to be about 154,325 which is distributed between Mobile and Pritchard. Industrial workers in the area constitute a considerable portion of the total population.

The basin is, in main, an industrial area. The major industries are state docks and ship terminals, ship building and repairing, paper, lumbering together with its associated activities, wood preserving, meat packing, and chemicals. The major agricultural products are truck crops and cattle, which are confined to the southern portions of Mobile and Baldwin counties. Commercial fishing and harvesting of shell fish are carried on rather extensively in the bay and coastal areas. All the population of Dauphin Island and practically the entire population of the extreme southern portions of the bay area obtain their livelihood from fishing, oystering, and associated activities. A large tourist trade is encountered in the area.

USE OF WATER RESOURCES

There are four public water supplies in the basin, two of which are obtained from surface sources. These two, for Mobile and Pritchard, are obtained from Three Mile and Eight

Mile Creeks. The present supply for Mobile is rather limited and construction is in progress to develop another source of supply on Big Creek, which is located in the Pascagoula River Basin. The reservoir on Big Creek will supply water for both domestic and industrial purposes.

Mobile is one of the largest ports on the Gulf Coast and shipping is a major industrial activity. The Mobile River serves as a waterway for inland navigation on the Lower Tombigbee, Warrior, and Alabama Rivers.

The eastern shore of Mobile Bay, Bon Secour Bay, Ft. Morgan Peninsula, Portersville Bay and Dog River have been highly developed as recreational areas.

Commercial fishing is a major activity in the Mobile Bay and Coastal areas. Practically all of the oysters harvested in Alabama waters come from Bon Secour Bay, the Cedar Point and Dauphin Island areas, and Portersville Bay.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A to I, inclusive.

Seven municipal sources of pollution, having a population of 129,800 served by sewer systems, contribute pollution to watercourses in the basin. This amount of pollution is reduced to a population equivalent of 118,475 by treatment in four primary and one secondary treatment plants which serve a population of 32,600.

There are seven industrial sources of pollution discharging wastes directly to watercourses of the area. Five of these produce organic wastes amounting in terms of equivalent number of people to 76,200. The amount of pollution discharged to a watercourse by one industry producing organic wastes is undetermined. One industry produces inorganic wastes. In view of the criteria established for harvesting of shell fish from a public health aspect certain waters in the Mobile Bay Basin have been closed to the harvesting of oysters.

There are no treatment facilities provided at any of the seven industrial establishments discharging wastes directly to watercourses of the basin. Of the five municipal treatment plants in the basin only one is considered to be satisfactory with reference to capacity and one is unsatisfactory in respect to operation.

In 1949 two sewage treatment plants were completed to serve a combined population of 35,000.

Requirements for waste treatment plants to abate pollution in the Mobile Bay area are four new plants to serve a population of 97,200 and one addition to an existing plant to serve 2,900 persons. Waste treatment plants are needed at six industrial establishments and waste treatment requirements at one industry is undetermined.

Two new plants and an addition to one plant are under construction. These three facilities will serve a population of 5,100. Plans for treatment works are under preparation at one other municipality, while no formal action has been taken with the remaining sources of municipal pollution. No action to abate pollution has been taken with the seven industrial establishments discharging wastes directly to watercourses of the basin.

TABLE A (44)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	7	129,800	118,475
Having population data available (Data on pollution load to watercourse incomplete or not available)	0	-	Not Applicable
TOTAL	7	129,800	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (44)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharged to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	5	76,200
Producing Organic Wastes	1	Undetermined
Producing Inorganic Wastes	1	Not Applicable
Producing Wastes of Undetermined Type	0	Undetermined
TOTAL	7	xxx xxx

TABLE C(44)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	4	4	31,100
Secondary	1	1	1,500
No Treatment	**4	XXXX	97,200

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** One municipality also included in secondary and primary treatment.

TABLE D(44)

EXISTING TREATMENT FACILITIES

INDUSTRIAL*

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food and Kindred Products	2	0	2	0
Paper & Allied Products	4	0	4	0
Miscellaneous	1	0	1	0

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(44)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	5	1	4	0	4	1	0
Industrial	0	-	-	-	-	-	-

TABLE F(44)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	2	35,000	0	-

TABLE G(44)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number*	Population Served by Facilities	Number
New Plant	4	97,200	6
Enlargement or Additions to Existing Plant	1	2,900	0
Replace Existing Plant	0	-	0
No Project Required	4	29,700	0
Undetermined	0	-	1

* One municipality in three requirement classifications.

TABLE H (44)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	1	7
Abatement Ordered	0	0
Plans under Preparation	1	0
Final Plans Approved	0	0
Construction Awaiting Financing	0	0
Under Construction	3	0
Status Undetermined	0	0

TABLE I

(44)

PROJECT LIST * MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Fairhope, Ala.	2,900	Addition to Plant	Under Construction
Mobile, Ala.	85,000	New Plant	
Mt. Vernon, Ala.	1,100	New Plant	Under Construction
Searcy Hospital	1,100	New Plant	Under Construction
Prichard	10,000	New Plant	
Food and Kindred Products	7,500	One New Plant	
Food and Kindred Products	not known	One Undetermined	
Paper & Allied Products	68,700	Four New Plants	
Miscellaneous	11,300	One New Plant	

SUB-BASIN 45

PASCAGOULA RIVER BASIN

GENERAL DESCRIPTION

The Pascagoula River Basin lies in southeastern Mississippi and southwestern Alabama. It comprises approximately 11,635 square miles, of which 10,892 are in Mississippi and 743 are in Alabama. The Pascagoula River is formed near the center of the basin in the northern part of George County, Mississippi, by the confluence of the Leaf and Chicasawhay Rivers, both of considerable size. Another major tributary, is the Escatawpa River which arises in Alabama and enters the estuary of the Pascagoula.

Topographically, the area may be divided into the lowlands forming a narrow belt three to five miles wide along the Gulf Coast, and the uplands with elevations to six hundred feet above sea level, which comprise the remainder of the basin. The slopes of the streams are very flat. A considerable mileage of coast on Mississippi Sound, an arm of the Gulf of Mexico, is included in this basin. This coastline is broken by Bay St. Louis, Biloxi Bay, and the mouths of numerous short coastal streams.

The mean annual rainfall varies from fifty-three inches in the northern part of the area to seventy-one inches at Biloxi on the coast, and is distributed fairly evenly throughout the seasons. A sixteen year record of the U.S. Geological Survey gauge at Merrill, Mississippi on the main stem of the Pasagoula River, having a drainage area of 6,600 square miles, shows the average discharge of the river at this point to be 9,881 cubic feet per second. The maximum flow recorded was 154,000 cubic feet per second and the minimum was 696 cubic feet per second.

The climate is mild. The mean annual temperature in the upper portion of the basin is about 64 degrees and 68.2 degrees along the coast. The number of frost free days varies from 230 to 290. Storms originating in the Gulf of Mexico are not uncommon along the coastal area.

The population of the watershed in 1940 was approximately 404,139, of which about one-third were urban. The preliminary 1950 census indicates a population in the basin of 508,152.

ECONOMIC DEVELOPMENT

In 1950 there were fifteen urban communities in the area, all in Mississippi, having an estimated total population of 206,690. Population along the coastal area is considerably increased during the winter months as a result of a large tourist influx through the resort centers of this area.

The basin is primarily one of agriculture, although industry is of growing importance. The land along the coast is especially suited for raising truck crops and fruits. Chief agricultural products are cotton, corn, pecans, peanuts, fruits, forest products, tung nuts, and cattle.

Approximately 40,000 persons are employed in industries of the basin. The principal industries based on the number of persons employed are listed as follows in order of importance; lumber and wood products, paper and allied products, fruit and kindred products, apparel and other fabric products, transportation equipment, chemical and allied products, and textile mill products. Petroleum oil development was begun in 1944. Since then a number of fields have been located and partially developed.

The chief means of livelihood for the coastal areas are the seafood industries and the tourist trade. Numerous sea food receiving and packing plants are located in these gulf coast ports. Biloxi ranks first among gulf coast ports in the production of sea food.

USE OF WATER RESOURCES

The area is well supplied with both surface and ground waters. Artesian wells are widely used for numicipal public water supplies. Meridian, Mississippi, has the only surface public water supply in the basin. In the upland portion of the basin both domestic and industrial water supplies are obtained from deep wells.

Important uses of the Pascagoula River and its tributaries are boating, fishing and hunting. Bay areas along the coast are used for numerous recreational purposes. The lower reaches of the Pascagoula River are used for navigation.

Sea coast waters are important as a source of oysters, shrimp and crabs which are taken commercially. Commerce in Biloxi Harbor averages 182,100 tons annually and consists principally of oysters, shrimp, petroleum products, ice, and pulp wood.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements, are shown in Tables A through I, inclusive.

There are twenty-five municipal sources of pollution in the basin, of which one is in Alabama. The population served by these twenty-five municipal sewerage systems is 188,700.

Twenty-six industries in the basin discharge their waste directly to watercourses of the basin. Fifteen of these produce organic wastes, ten produce inorganic wastes, and the wastes produced by one is undetermined.

No detailed survey has been made of the Pascagoula River and its tributaries. However, it is known that excessive pollution, both domestic sewage and industrial waste, is discharged into Sowashee Creek at Meridian and Tallahala Creek at Laurel, Mississippi. Certain areas at the mouth of the Pascagoula River have been eliminated as shell fish areas, because of pollution carried to the Gulf by the streams.

Bayou Bernard which empties into Back Bay at Biloxi receives sufficient amounts of industrial waste and domestic sewage to destroy the fish life periodically. This pollution is carried down stream into Biloxi Bay.

Primary treatment plants at eight municipalities serve a population of 27,100 and nine municipalities have secondary treatment plants with a connected population of 35,400. One of these municipalities has secondary treatment for only a portion of the total sewage discharged by the city. No treatment is given at an additional eight municipalities. The total population served by collection systems with no treatment is 126,200.

The wastes of the twenty-six industrial establishments in the area having separate outlets discharge directly to a watercourse without treatment.

Of the seventeen municipal treatment facilities in the basin, ten are considered to have adequate capacity. Fifteen are adequate with relation to operation.

In 1949 one new municipal sewage treatment plant, to serve 1,000 persons, was placed in operation.

Requirements for the basin include ten new treatment plants to serve a population of 123,400, enlargement of one plant serving 20,000 persons, and the replacement of one existing plant having a connected population of 800. Requirements for the twenty-six industrial establishments discharging directly to watercourses are undetermined. No projects are required at municipalities having a total population of 44,500.

Final plans have been approved for one municipal sewage treatment plant designed to serve 35,000 persons. No formal action has been taken with other municipal and industrial polluters within the basin.

TABLE A (45)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	1	800	525
Having population data available (Data on pollution load to watercourse incomplete or not available)	24	187,900	Not applicable
TOTAL	25	188,700	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (45)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharge. to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	0	-
Producing Organic Wastes	15	Undetermined
Producing Inorganic Wastes	10	Not Applicable
Producing Wastes of Undetermined Type	1	Undetermined
TOTAL	26	xxx xxx

TABLE C(45)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	8	8	27,100
Secondary	** 9	9	35,400
No Treatment	9	XXXX	126,200

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

** Includes one municipality reported in two classifications.

TABLE D(45)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

		Number of Industrial Plants Having:		
Type Industry	Number of Plants	Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	8	0	8	0
Textile Mill Products	2	0	2	0
Paper & Allied Products	3	0	3	0
Chemicals & Allied Products	12	0	12	0
Miscellaneous	1	0	1	0

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E (45)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to: Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	17	10	7	0	15	2	0
Industrial	0	-	-	-	-	-	-

TABLE F(45)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv. No. People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	1	1,000	0	-

TABLE G(45)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	10	123,400	0
Enlargement or Additions to Existing Plant	1	20,000	0
Replace Existing Plant	1	800	0
No Project Required	* 14	44,500	0
Undetermined	0	0	26

* Includes one municipality with multiple outlets.

TABLE H(45)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number Municipal	Industrial
No Formal Action	11	26
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	1	0
Construction Awaiting Financing	0	0
Under Construction	0	0
Status Undetermined	0	0

TABLE I (45)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Alabama			
Municipalities			
Citronelle	800	Replace Existing Plant	
Industries			
None			
Mississippi			
Municipalities			
Decatur	500	New Plant	
Ellisville	1,400	New Plant	
Hattiesburg	40,000	New Plant	
Laurel	35,000	New Plant	Final Plans Approved
Magee	1,000	New Plant	
Meridian	40,000	New Plant	
Newton	2,000	New Plant	
Pascagoula	20,000	Enlarge Existing Plant	
Richton	800	New Plant	
Union	1,500	New Plant	
Waynesboro	1,200	New Plant	

2-I-45

Name	Population Served	Project Requirements	Remarks
Mississippi **Industries**			
Eight Food & Kindred Products	Not Known	Undetermined	
Two Textile Mill Products	Not Known	Undetermined	
Three Paper & Allied Products	Not Known	Undetermined	
Twelve Chemical & Allied Products	Not Known	Undetermined	
One Miscellaneous	Not Known	Undetermined	

SUB-BASIN 46

PEARL RIVER BASIN

GENERAL DESCRIPTION

The Pearl River Basin is a long narrow basin approximately 175 miles in length and 35 miles wide. It is bounded on the north and east by the Upper Tombigbee River Basin and the Pascagoula River Basin, on the west by the Mississippi River Basin and drainage to Lake Ponchartrain in Louisiana. The Pearl River is formed in the central part of Mississippi by the convergence of Tuscumbia and Lobutcha Creeks with Yokahockny River. The main stem of the river flows in a southerly direction into the Gulf of Mexico. The lower portion of the stream serves as a boundary between Louisiana and Mississippi.

The total area of the basin is estimated at 8,943 square miles, of which 8,134 are in Mississippi and 809 are in Louisiana.

The upper portion of the basin is hilly. These hills of the upper reaches rise to an elevation in excess of 400 feet. The lower portion of the basin is very flat.

In general river slopes are relatively flat, but at one point in Leake County, a small natural waterfall exists along with the convergence of adjacent hills. This site is suited for dam construction.

The mean annual rainfall varies from about fifty-three inches in the upper portion of the basin to sixty-three inches along the gulf coast. A ten year record at the U. S. Geological Survey gauge at Bogalusa, Louisiana, having a drainage area of 6,630 square miles, shows the minimum flow recorded at this point to have been 1,290 cubic feet per second.

The mean annual temperature varies from sixty-four degrees in the northern portion of the basin to sixty-eight degrees along the gulf coast. Storms originating in the Gulf of Mexico are not uncommon in the lower portion of the basin.

The 1940 population of the basin was 408,338, of which about 27 percent was classified as urban. The preliminary 1950 census indicates the basin population to be 439,123 with an increase in urban population to 36 percent.

ECONOMIC DEVELOPMENT

There are ten urban communities in the Pearl River Basin, of which one is in Louisiana, and nine in Mississippi. The 1950 estimated population for the urban communities is 276,095.

The chief agricultural products of the area are cotton, corn, hay, tung nuts, cattle, and dairy products. Lumbering, manufacturing, natural gas and oil production, centralized Government Agencies, and manufacturers' representation (in Jackson, Mississippi) are the main sources of livelihood for the urban population.

A number of oil and gas fields have been developed in the southern portion of the basin within the past few years.

USE OF WATER RESOURCES

There are thirty-two municipal public water supplies in the basin. The City of Jackson, Mississippi is the only municipality using surface water as a source of supply.

The other uses of the stream in the basin are recreational; chiefly fishing, hunting, and boating. There is some commercial fishing on the larger streams in the basin. Tributary streams supply water for livestock.

POLLUTION AND POLLUTION CONTROL

Available data regarding sources and amounts of domestic and industrial pollution, existing treatment facilities and treatment plant requirements are shown in Tables A through I, inclusive.

There are seventeen municipal sources of pollution in the basin, having a total sewered population of 156,500. Of these municipalities, thirteen have primary treatment facilities serving a population of 21,500 and one has a secondary treatment plant serving a population of 5,000. The population at three municipalities having no treatment is, 130,000.

Eight industries in Mississippi discharge pollution directly to watercourses of the basin. There are an additional twelve industries of the type normally considered to discharge waste with pollution characteristics located in the Louisiana portion of the basin. These Louisiana industries may or may not have separate outlets discharging directly to watercourses. The character of the wastes from thirteen of the twenty industries in the basin is undetermined. No waste treatment facilities are provided at any of the industrial establishments in the basin, that discharge directly to a watercourse.

Eleven of the fourteen municipal sewage treatment plants are inadequate with relation to capacity. Operation at three municipal treatment plants is unsatisfactory.

During the period 1946 through 1949 one municipal sewage treatment works was completed in Mississippi to serve a population of 5,000.

Projects to abate pollution of the streams of the basin include eight new plants to serve 129,800 persons and replacement of one existing plant serving a population of 5,000. No projects are required at eight municipalities having a total population of 21,700. Requirements for waste treatment at the twenty industrial establishments are undetermined.

Final plans have been approved for one treatment plant and one plant is under construction in Mississippi. No formal action has been taken with the remaining seven municipalities requiring treatment projects to abate pollution. No formal action has been taken with the eight industrial establishments in Mississippi in regard to abatement of pollution from their industrial wastes. The status of projects for industrial waste treatment in Louisiana are undetermined.

TABLE A(46)

SOURCES OF POLLUTION

MUNICIPAL

Municipalities*	Sources of Pollution (In Number of Municipalities)	Population Served by Sewerage System	Amount of Pollution Discharged to Watercourse (In Terms of Equivalent number of People)
Having data on pollution load discharged to watercourse	2	11,000	10,650
Having population data available (Data on pollution load to watercourse incomplete or not available)	15	145,500	Not Applicable
TOTAL	17	156,500	XXX XXX

*Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE B (46)

SOURCES OF POLLUTION

INDUSTRIAL

Industries	Sources of Pollution (In Number of Plants)	Amount of Pollution Discharg to Watercourse (In Terms of Equiv. No. of People)
Producing Organic Wastes	0	-
Producing Organic Wastes	2	Undetermined
Producing Inorganic Wastes	5	Not Applicable
Producing Wastes of Undetermined Type	* 13	Undetermined
TOTAL	20	xxx xxx

* Includes twelve industries (only those types normally considered to discharge wastes with pollution characteristics) located in the Louisiana portion of the sub-basin, which may or may not have separate outlets. Information obtained from " Industrial Directory" prepared by The Department of Commerce and Industry of the State of Louisiana.

TABLE C(46)

EXISTING TREATMENT FACILITIES

MUNICIPAL

Degree of Treatment Provided	Number Municipalities*	Plants	Population Served
Primary	13	13	21,500
Secondary	1	1	5,000
No Treatment	3	XXXX	130,000

* Includes incorporated or unincorporated municipalities, other legal bodies as sanitary districts, counties, towns, significant institutions, resorts, recreational centers, or other population centers; sanitary sewage wastes discharged by industry directly to watercourse and industrial wastes discharged into municipal sewage systems.

TABLE D(46)

EXISTING TREATMENT FACILITIES

INDUSTRIAL *

Type Industry	Number of Plants	Number of Industrial Plants Having: Treatment Facilities	No Treatment Facilities	Undetermined Facilities
Food & Kindred Products	8	0	2	6
Textile Mill Products	1	0	1	0
Paper & Allied Products	1	0	0	1
Lumber & Wood Products	1	0	0	1
Chemical & Allied Products	6	0	4	2
Product of Petroleum	1	0	1	0
Primary Metals Products	1	0	1	0
Miscellaneous	1	0	0	1

* Industries having separate outlets and discharging wastes directly to watercourse.

TABLE E(46)

ADEQUACY OF EXISTING TREATMENT FACILITIES

Existing Treatment Facilities	Number	Adequacy with Relation to:					
		Capacity			Operation		
		Satisf.	Unsatisf.	Undetermined	Satisf.	Unsatisf.	Undetermined
Municipal	14	3	11	0	11	3	0
Industrial	0	-	-	-	-	-	-

TABLE F(46)

PROGRESS IN POLLUTION ABATEMENT

	Municipal		Industrial	
Year	Plants Completed	Design Population	Plants Completed	Amount of Wastes Treated (In Terms of Equiv.No.People)
1946	0	-	0	-
1947	0	-	0	-
1948	0	-	0	-
1949	1	5,000	0	-

TABLE G(46)

REQUIREMENTS FOR MUNICIPAL AND INDUSTRIAL WASTE TREATMENT PLANTS

Requirements	Municipal		Industrial
	Number	Population Served by Facilities	Number
New Plant	8	129,800	0
Enlargement or Additions to Existing Plant	0	-	0
Replace Existing Plant	1	5,000	0
No Project Required	8	21,700	0
Undetermined	0	-	19

TABLE H(46)

STATUS OF TREATMENT WORKS PROJECT TO ABATE POLLUTION

July 1, 1950

Status of Project	Number	
	Municipal	Industrial
No Formal Action	7	8
Abatement Ordered	0	0
Plans under Preparation	0	0
Final Plans Approved	1	0
Construction Awaiting Financing	0	0
Under Construction	1	0
Status Undetermined	0	0

TABLE I (46)

PROJECT LIST - MUNICIPALITIES AND INDUSTRIES REQUIRING IMPROVEMENTS FOR ABATEMENT OF POLLUTION

July 1, 1950

Name	Population Served	Project Requirements	Remarks
Louisiana			
Municipalities			
None			
Industries			
Six Food & Kindred Products	Not Known	Undetermined	
One Lumber and Wood Products	Not Known	Undetermined	
One Paper and Allied Products	Not Known	Undetermined	
Two Chemical and Allied Products	Not Known	Undetermined	
One Primary Metal Products	Not Known	Undetermined	
One Miscellaneous	Not Known	Undetermined	
Mississippi			
Municipalities			
Brookhaven	5,000	Replace Existing Plant	Under Construction
Carthage	1,400	New Plant	
Forest	2,500	New Plant	
Hazelhurst	2,000	New Plant	Final Plans Approved
Jackson	115,000	New Plant	
Kosciusko	4,000	New Plant	

Name	Population Served	Project Requirements	Remarks
Mississippi Municipalities			
Louisville	3,200	New Plant	
Morton	1,200	New Plant	
Pelahatche	500	New Plant	
Industries			
Two Food & Kindred Products	Not Known	Undetermined	
One Textile Mill Products	Not Known	Undetermined	
Four Chemical & Allied Products	Not Known	Undetermined	
One Products of Petroleum	Not Known	Undetermined	